The Builder.

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Bow Church Restoration.

"And Frenche she spake ful fayre and fetisly,
After the scole of Stratforde atte Bowe,
For Frenche of Paris was to hire unknowe."
CHAUCER'S "Canterbury Tales."

ON Monday next, the 12th instant, the ancient Parish Church of Bow is to be reopened for public worship by the Bishop of London. Our readers may remember that in 1896 this church had to be closed on account of its dangerous condition, and that a proposal was then made that it should be demolished.

The origin and date of erection of the existing church is a matter of dispute, but credence is most generally given to the account recorded by Newcourt. In the year 1311 Bishop Baldock granted the inhabitants of Stratford and Old Ford a licence to build a chapel in the King's highway, on account of the distance of their abodes from their parish church at Stepney, and the impassability of the roads during the winter floods. Judging, however, from the architecture of the church, it appears certain that no part of the existing building is of earlier date than the latter end of the fifteenth century (1480-1490), and although there is a complete absence of documentary evidence as to the building of a new church at this date, there is very little doubt that the chapel which existed on the site from 1311, or a few years later, to about the year 1480 was then replaced by a new structure, of which the chancel, the lower part of the tower, the lower portions of the aisles, and possibly the roof of the nave still remain. The nave, which consists of a stone arcading (now covered with plaster and paint), with plain octagonal shafts, is evidently of a still later date. Probably both the nave and the north aisle were built in the middle of the sixteenth century, and the south aisle has been entirely rebuilt during the present century.

Sir Walter Besant, in his historical work entitled "London," writes: — "He, for instance, who walks along the broad highway of Whitechapel and Mile End, if he continues his walk, presently arrives at a most interesting and venerable church. It is quite small, with a low tower; it stands in the middle of the road and has a long, narrow churchyard, cigar-shaped, before and behind it. This is the Church of St. Mary, or Bow Church. It was formerly the church of a nunnery founded at Stratford-le-Bow by William the Conqueror; it was augmented by Stephen, enriched by Henry II. and Richard I., and lasted till the Dissolution." It is evident in this account that the history of a nunnery which existed at Stratford, or at Barking, upon the Essex side of the River Lea, has been confounded with that of the church of Stratford Bow which is situated upon the Middlesex side.

Lysons, in his "Environs of London," gives several illustrations of Bow Church and its neighbourhood, and in the copy in the Guildhall Library several additional drawings, some of them coloured, are inserted. One very badly executed drawing shows the church as it existed in 1754, while others represent the church in 1826, and as it appeared "before the alteration in 1794," and at other periods. The illustration of "Bow Church in 1800," from a painting of that date, shows also the ancient Market House, said to have been erected in the reign of Henry II. and not more than six to eight yards from the east end of the church. It was in a room over this market that the school founded by Sir John Jolls (or Jolles), about the year 1613 found accommodation. The ruined remains of the old mart existed until about 1835, when the site was utilised as a burial ground. Other illustrations represent the old font, which may still be seen in the church; the armorial bearings of some of the families formerly resident in the neighbourhood; and the burning at the stake of thirteen persons in this parish in 1556 for what was then deemed heresy. This latter event is now believed to have occurred in Stratford, and not in Stratford Bow.

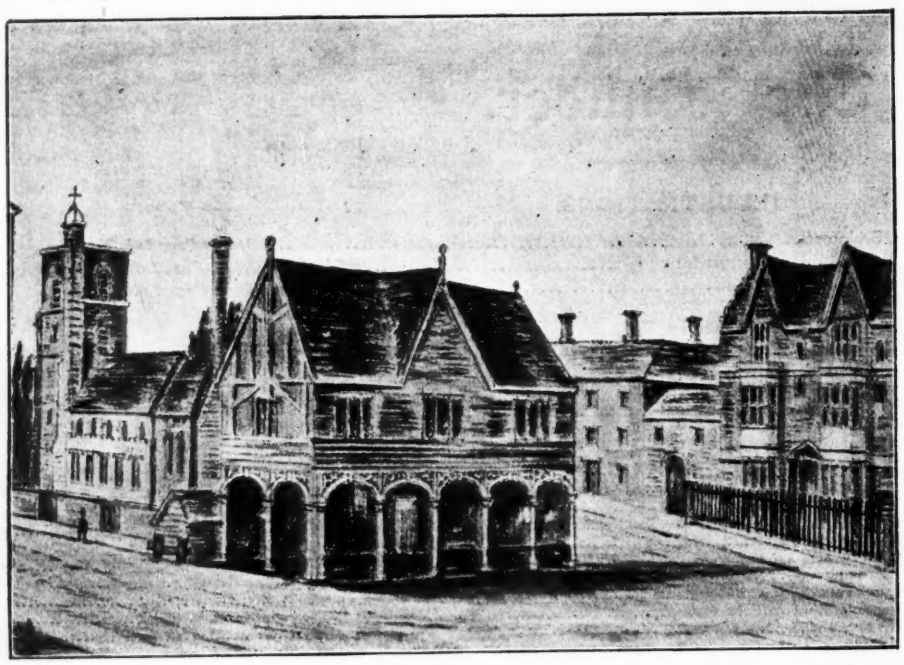
In 1883 Sir Arthur Blomfield prepared a design for rebuilding the whole of the church except the fifteenth century tower and the modern organ chamber. In this design increased accommodation and new vestries were provided, but owing to lack of funds the scheme was eventually abandoned. About the year 1887 a modern gallery, which partly concealed the west window, was removed, and the high-backed pews were cut down, but no serious attempt was made to deal with the structural defects until in October, 1896, a portion of the chancel roof subsided, and it became necessary to close the church.

A Restoration Committee was then formed, and ultimately the joint efforts of the Committee for the Survey of the Memorials of Greater London, the National Trust for Places of Historic Interest or Natural Beauty, the Society for the Protection of Ancient Buildings, the Bishop of Stepney and other gentlemen resulted in the collection of sufficient funds to commence the much-needed repairs. In carrying out the present restoration every effort has been made to repair well and substantially without making any marked alteration in the appearance of the edifice.

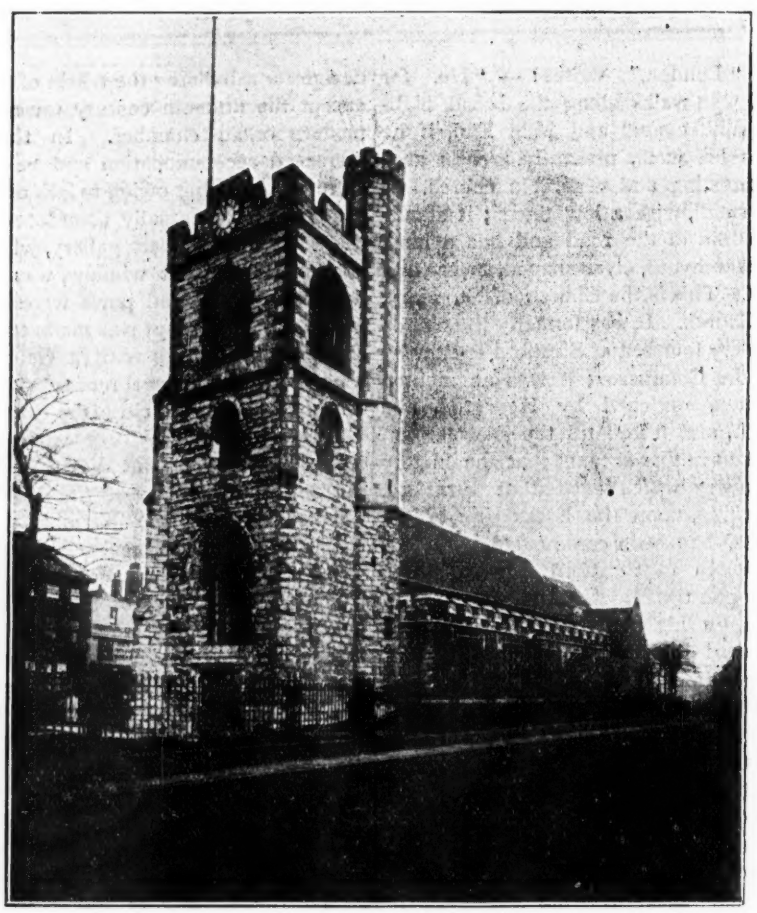
The name by which the church was formerly known, viz., "The Chapel of St. Mary, Stratford atte Bowe," was probably derived from the proximity of the church to the bridge "arched like unto a bowe," which was built by Matilda, Queen of Henry I., over or near the straight-ford across the River Lea. The church remained a chapel-of-ease to Stepney until 1719, when it was consecrated as the parish church. John Stow, in his "Survey of London" in 1598, records that "there was an ancient custom for the inhabitants of this town of Stratford-at-Bow to go in procession to the Church of St. Peter, Westminster, all through the City of London, at Whitsuntide, in token of some dependence of this town upon that church. This they got themselves released of, in the days of Henry the Eighth."

Erected in the great main road* leading

* Until the present century the road on the south side only of the church appears to have been used for vehicular traffic. An old oil painting now in possession of Mr. O. C. Hills of Bow shows the road on the north side stopped by a wooden barred gate.



Bow Church and Market House in 1800 (from an Old Painting).



Bow Church in 1899.

from London to Romford, Colchester, and Harwich, this church has always been a notable object, and has attracted the attention of several historians and artists. Incredible as it must appear to the visitor of to-day, the parish of Bow was, within the memory of living residents, a rural village, with wealthy families living in the neighbourhood and residing in spacious houses surrounded by meadow land and cornfields. The *Mirror*, as recently as 1825, remarked that "there are few places in the vicinity of London which are more interesting from the evident marks of antiquity that are displayed in and about them than the village of Bow, or, as it is commonly termed, Stratford Bow, in the county of Middlesex.

"The village itself seems originally to have derived its importance first from an ancient ford near one of the Roman highways, and, secondly, from a bridge of one arch over the River Lea, built by Henry I., probably at the instance of Matilda, who, as it is stated, in attempting to pass the ford "got well washed in the stream" (*vide* Leland). The church itself is not of great architectural interest, although the west window and doorway in the tower are well worthy of notice; but it may be said to represent a correct specimen of second-rate ecclesiastical architecture of the fifteenth century period. The chancel gable, with its tiled roof, took the place of a flat roof in 1755. The upper portion of the tower, which the eye at once detects as work of recent date, was added shortly after the year 1829, when a portion of the upper part of the tower as it then existed fell down during the night. About 1840 the flat plaster ceiling of the nave and the window curtains were removed, and the old oak roof was exposed.

The opinion has been expressed that the spread of the walls is due entirely to the removal at the latter date of the ceiling joists, which it is thought acted as effective ties; but the architects do not hold this view, as in their opinion the defect is of far longer standing.

The restoration works, which have just been completed, may be summarised as follows:—

The Chancel.—The gable roof of 1755 has been practically renewed and the brick gable rebuilt, but the old timbers are left, although they now do no work. The fifteenth century roof, as seen from the interior, remains unaltered. The walls have been rejointed with tiles and flints, and a little new Portland stone inserted.

The Nave.—Practically a new roof has been provided, although some of the old timbers have been re-used. Double oak windows have also been added to lessen the nuisance created by the clamour of the heavy traffic which passes within a few feet of the church windows.

The North Aisle.—A new doorway to the modern vestry has been formed, and the wall has been repaired in the same way as the chancel.

New Work.—The old red brick vestry has been extended to embrace a choir vestry and entrance lobby.

The tower is now the only part of the church remaining to be repaired. Some 3,700*l.* have already been spent on the restoration, about 1,000*l.* of which have still to be collected, while another 1,000*l.* are required for the tower. It is earnestly hoped that this sum of 2,000*l.* will be publicly subscribed, as otherwise the most interesting portion of the building must be allowed to become a ruin.

The restoration has been carried out by the local architects, Messrs. Walter A. Hills & Son.

For the present the historic little edifice has been snatched from the destroying hand of the Vandal; and the new century upon its advent will find the same old landmark, whose weather-beaten form has for so many ages stood conspicuous in the great highway, still occupying its accustomed place. Its present aspect is indicated in the accompanying illustration.

ARCHITECTURE AT THE ROYAL ACADEMY.—III.

DOMESTIC ARCHITECTURE.

THERE is a pretty good proportion of domestic architecture in the Architectural Room at the Royal Academy, though there is no design for any mansion of the largest class. We may divide the exhibits, however, into the larger country houses which aim at a certain degree of dignity, and those smaller ones in which the general aim (at present at all events) is to be picturesque and piquant.

Among the larger houses we first come on two by Mr. Leonard Stokes, "Cold Ash, near Newbury" (1,616) and "No. 2, West

Drive, Streatham Park" (1,622), though no one at first glance would suppose they were by the same architect, so totally different is their character and treatment. "Cold Ash" seems to owe something to suggestions from the modern American type of country house, in which there is a kind of affectation of simplicity, a cottage character given to a house on a large scale; a verandah on bare poles, with a thick battered retaining wall under it. The author sets a good example in giving both a plan and a compass, which, however, unfortunately shows that both kitchen and dining-room have an aspect towards the west—bad for both cook and diners on hot summer evenings. The Streatham Park house, with a plan but no compass, is one of the substantial square order, with large rooms, and is a much more satisfactory work in style than the other; it gets great dignity from its very boldly projecting cornice, and there is an original and effective architectural treatment of the chimneys, which are combined into one great stack in the middle of the roofs, or, more properly, two stacks which are architecturally connected by a special "treatment." It is surprising that one does not see more attempts made in modern houses to do something with the chimneys, instead of leaving them so many excrescences sticking up all over the design, as in Mr. Prentice's "Cavenham Hall, Suffolk" (1,624, 1,634, 1,684), where they quite spoil the house, which is in itself a nice quiet type of archæological work, though there is nothing either in the plan or the design to justify the hanging of three different views of it, a favour obviously due to the author's picturesque and effective pen-drawing; for the architectural room is much more an exhibition of architectural drawing than of architecture. The plan of the house is too rambling and uncertain in method for our liking (though such rambling plan is popular at present). We observe that, as in several other house plans in the room, the kitchen window is on the wrong side of the cooking-range—or the cooking-range on the wrong side of the window, whichever way you like to put it; the cooking-range ought to have a left-hand light; it is surprising how few architects seem to be aware of this. The materials appear to be brick walls with large spaces of roughcast or other whited surface, as far as one can gather from the drawings. The effect of the square forecourt with the circular drive would be good.

Mr. Wornum's "Las Fraguas, Santander, Spain" (1,630) shows no plan, and is merely a view of a house with ordinary English detail, about which the only element of surprise would be to meet with it in Spain. Mr. Mackenzie's slight sketch of "The new clock tower, Fyvie Castle" (1,657) shows a pleasant bit of modern Scotch Jacobean; and from this we pass on to Mr. Leiper's "Staircase and Gallery, Kelly House" (1,745), a coloured sectional drawing showing a solidly wainscotted gallery with some stained windows well put in, and an equally solid wood staircase with an arcade carried on rather massive polished columns; from the colouring this seems to be of wood, but if so, it is distinctly a wooden imitation of stone architecture. However, this is a type of drawing one is glad to see in the architectural room, and of which there ought to be more, in place of so many mere pictures. Mr. John S. Lee's "Design for a Garden by a River" (1,751), a palatial Italian garden, is another geometrical drawing, on a small scale but with a good deal of interest, showing a circular *bassin* with balustraded staircases winding up on each side to a terrace; the square pavilions at each end of the terrace, placed cant-wise, so that the balustrade runs up to their angles, have a piquant effect, but are not quite in keeping with the severely Classic mode of the remainder of the composition. It is an easy step from this geometrical drawing of a classic garden to Mr. Vigers's perspective drawing of an English house and garden (1,818), where the garden, backed by a landscape, is really the principal object of the drawing; the house occupies a small portion in the middle distance of the picture—a plain red-brick house with a red-tiled roof and an octagon bay at one angle. The garden is shown and coloured with great delicacy and minuteness, in a partially birds-eye view from a high standpoint; next the house a terrace with coloured *parterres* and clipped trees, with a brick sunk fence giving on a wide square lawn, ending in a deeper brick *revêtement* wall with flying steps on arches leading down into the field in the foreground. Flanking the grass-plat on the left is the kitchen garden, amid massive box hedges, in the corresponding position on the right the flower garden. This is a very delicate and highly-finished drawing, and worth careful examination. Mr. Ferguson's "Garden House, Fairlawn, Kent" (1,822) is interesting as a specimen of the old-fashioned pompous Classic stone conservatory with an order, shown in an effective drawing. Mr. Pryce's "Ifield Wood, Sussex—enlargement of an old farm-house" (1,840) and Mr. Bedford's "Dalguise Harrogate" (1,841) both make picturesque views of house and garden; the latter is a mere picture, without a plan. Then we come to a drawing of a very different kind in Mr. Belcher's large and severe elevation of "House at Pangbourne—Garden Front" (1 854), a coloured geometrical drawing on rather a larger scale than was necessary to show the detail, of which in fact there is not very much, except in the pavement of the terrace, which is carefully shown on the plan of the front. This, again, is just the sort of drawing we like to see in the architectural room, though we should have thought the semi-octagon bays, on which the centre pediment seems to rest, would have been none the worse for a little more dignified treatment than is afforded by the mere thin coping which is its only finish; but that excessive plainness also is a taste of the day, and is no doubt more wholesome than the excess of ornament from which it is a reaction.

Among the smaller class of country houses and houses of the cottage type, if of more than cottage size, we find a general character prevalent—that of a certain rural simplicity, an absence of anything like architectural pretension, which is perhaps a little too conscious—it is the note of the day. Messrs. Niven & Wigglesworth's "Hillington, Walton-on-Thames" (1,611), with its three equally-spaced circular bays exactly alike, is somewhat an exception, a little more symmetrical and formal than most; there is no plan, and therefore we cannot form any idea of the relation of these bays to the interior arrangement. Nor is there any plan of Messrs. Brewill & Baily's "Apsley Heath" (1,612), which in fact is about as destitute of interest as a drawing can be. Mr. Reynolds's "Design for a Country House" (1,631) looks at first sight more like a country church, the windows of the "gallery" suggesting a side aisle; the large mass of the chimney, a plain unadorned erection of battered walling, contradicts the church idea; and there is a plan—a rather crude one, where again we see the kitchen window and fireplace wrongly arranged. It is a picturesque bit of drawing, however, and as such is probably hung. The plans of "Sunnyside, Holmwood" (1,633), by Mr. W. T. Barlow, are given; neither plan nor design have any marked character. Then we have two sets of stables; Mr. W. A. Pite's "Stables," Highcombe Edge, Hindhead" (1,652), a coupie of little line elevations with a good deal of character, and Mr. Horsley's "New Stables, Whitley Hall" (1,656), a building exactly like an old sixteenth century farm house of ⌐ plan, pleasing enough, but a little too like "an antick" (antique), as Edie Ochiltree phrased it. A plan is given here; none is appended to Mr. C. J. Blomfield's house near Abingdon, another bit of antique in a different manner. Mr. Arnold Mitchell's "Small house at Rickmansworth" (1,724) is an antique of yet another type, the half-timber gable cottage; it probably looks more attractive in the admirable drawing than in reality. At last, in Mr. Voysey's "House at Windermere" (1,725) we come on something with original character; it is in that whitey-green combination which Mr. Voysey has invented; here also are three semi-circular bays, treated with a distinctive character; the middle one, representing the hall, differentiated from the other two by being glazed all the way up, while the others are divided into two stories. We suspect that these houses of Mr. Voysey's also owe something in effect to the drawing; but at all events there is character here which is not obtained merely by imitation of old work. Mr. Marriott, in "Proposed House at Limpsfield" (1,780), plans and elevation on grey paper with the upper part of the elevation whited to represent plaster (a rather cheap means of getting effect in a drawing), has produced a pleasing and simple design of cottage type, and has the merit of giving his plans the same importance as the elevation; unfortunately the plan is not altogether happy, for kitchen and drawing-room windows both have the same aspect; there is no compass to show what it is, but every architect ought at all events to know that what is the right aspect for the kitchen must be the wrong one for the drawing-room. "A Country Home," by Mr. F. Forbes Glennie, is a sheet of elevation and plans, of which the former are rather commonplace; the "gallery" in the plan, between dining-room and drawing-room, is a good point. Messrs. Hall, Cooper, & Davis's "Four Houses at Scalby, Yorkshire" (1,791), is really a terrace, treated with some originality; the prominent features are two large projecting square bays each of which contains in its ground story the porches of two of the doors, recessed; in other respects there is original character in this design, which at least avoids the commonplace of the ordinary terrace. In Mr. Baillie Scott's "Le Nid" (1,823) we have an interior of real charm; a coloured draw-

ing showing a room in a house which is treated with white, light blue, and a delicate warm yellow, as the prevalent colours; at the back of the room, up two steps, is a small oratory, divided off by a railing, and with its altar and stained-glass window; over the opening, on the frieze, are the words:

"We two will stand before that shrine
Occult, withheld, untrod."

There is a touch of real poetry about this interior which it is refreshing to meet with.

Street houses form another class, of which there are a few good examples. There is one point in which street architecture differs in its conditions from the architecture of houses standing in a free space, and which is often rather lost sight of, viz., that it is much less easy to see the actual building as you see it on paper, when it stands in a street, unless the street is an unusually wide one. A country house can generally be seen, in reality, as it seems to the eye on paper. In a street elevation the lower portion, in the actual building, is generally much more prominent to the eye than the upper portion, which is only seen foreshortened. The natural conclusion would be that detail and decorative treatment should be concentrated on the lower rather than the upper portion of the front, though the reverse treatment looks better on paper. This consideration does not preclude, however, the introduction of a large and rich cornice, provided it be designed so as to present a good appearance when seen from below. We do not know that any designs in the Academy room specially illustrate this point, one way or the other; but it is one that is worth bearing in mind. Among the street architecture designs is one of Mr. Greenslade's small and delicate elevation studies (1,610), which is very refined and very suitable for a street, and would perhaps be still better without certain little bits of rather unnecessary ornament which occur on it. Mr. Batterbury's "Stone Front, 233, Strand" (1,643) is an example of a solidly treated shop front. Mr. Jaggard's "A Town House" (1,673), a design which, if we remember right, has appeared in our pages, combines a solid appearance with a flat treatment of detail which is suitable to the situation. The most important piece of street architecture in the room is Mr. Belcher's "New Premises, Hanover-square" (1,727), a large square front treated with the conventional Corinthian pilaster in the upper portion, with the conventional cornice and attic over it; what gives distinctive character to it is the very effective and graceful manner in which sculpture is introduced above the first-floor windows, making a broad band across the front, and the way in which the treatment of the windows is varied so as to give interest and change but without departing from classical symmetry and repose. Mr. Beresford Pite's drawings of three house fronts, one in Bond-street and two in Harley-street, do not show very well where they are hung; every one knows they are good work. Mr. Ravenscroft's small elevations of brick street houses for a London suburb (1,847) are in very good taste; whether placing the ground floor groups of windows out of centre with those above is an advantage may be questioned, but it is justifiable if it arises out of the planning. Messrs. Wimperis & East's "Proposed rebuilding of London newspaper offices" (1,620), on a front with a concave curve, gets a good effect from the projecting pavilions at each end of the curve, which flank the general line of elevation and form a stop to it; and Mr. Harold Cooper's "Exterior, 16, Stratton-street" (1,764), is a good piece of plain but characteristic building. Mr. Powell's "Addition to Premises, East Grinstead" (1,621), seems to have been hung simply for the drawing, which is a clever one in coloured crayon, but has absolutely nothing in it architecturally, consisting chiefly of shop blinds and awnings; and Mr. Quennell's "Entrance to house in Rosecroft-avenue, West Hampstead" (1,688), a line drawing in a quasi-antique style, comes under the same class; there is nothing in the design, it is simply a bit of very clever drawing. These two drawings are rather emphatic illustrations of the extent to which drawing, and not architectural thought, influences the choice of things for the architectural room.

In our next and final notice we shall have something to say as to the drawings of decorative design.

NOTES.

Birthday Honours.

THE conferring of the honour of Knighthood on Mr. Alma-Tadema will meet with universal approval, but that is the only recognition of any kind which is bestowed upon art. As usual, and as has been the case for many years, the art of architecture, to which the country owes the decoration of its cities, is entirely ignored; indeed, one might suppose that to the persons—whoever they are—with whom really rests the responsibility of selecting candidates for titular honours, the existence of architecture and of architects is unknown. The engineers, it appears, are looked upon with more favour, and Mr. Preece receives a K.C.B. Few men have done more than he has to popularise science, as a lecturer; as an author he is best known by his text-book of telegraphy, which he wrote in collaboration with Sir James Sivewright; and he has contributed some eight or nine papers to the Royal Society, and numerous papers to the Institutions of Civil and Electrical Engineers and to the Physical Society. No one will find fault with his selection as an engineering representative. What we do find fault with is the entire and almost inexplicable ignoring, year after year, of the architects.

The London Building Act.

THE Queen's Bench Division of the High Court of Justice has decided that a public-house does not come under Section 74 of the London Building Act. That section requires that when a building is used in part for the purposes of trade or manufacture, and in part as a dwelling-house, these separate parts shall be divided by walls and floors constructed of fire-resisting materials. The decision of the Court seems clearly right. It was urged on behalf of the owners of the public-house that no line could be drawn between the part used as a public-house and the part used as a dwelling. This is true, especially as it has to be borne in mind that the entire building is licensed. It may also be doubted whether the section was ever intended to apply to public-houses, which are only private houses where alcoholic drinks may be bought or consumed. However, be that as it may, this case of Carrick *v.* Godson & Sons has placed the matter beyond doubt, and to have any question upon which any feeling of uncertainty exists in regard to the Act set at rest is very desirable. Whether, however, much more stringent regulations in regard to the area, plan, &c., of public-houses are needed is a matter for discussion. The sanitary condition of many public-houses outside London is not what it should be.

Appeals on Workmen's Compensation Act.

THERE are fifteen appeals already entered for hearing under this Act for the present sittings, and the number is sure to be increased from week to week. This is an unprecedented circumstance in regard to a single statute, and shows the great amount of litigation which this Act of Parliament has produced. The fact does not necessarily mean that the Act has not produced satisfactory results, taken as a whole; but it certainly does mean that it was badly drafted and has produced a great deal of litigation which ought to have been avoided. It is too much the tendency of Parliament at the present time to formulate rules of conduct very indefinitely in statutes, leaving it to the public and the Judges to make what they can of them. The Legislature vaguely lays down its intentions instead of formulating them with precision.

Early Remains found at the Tower.

BY the courtesy of the authorities we have been enabled to see the remains that have just been discovered in laying foundations for a new guard-house (on the same site) at the Tower, Messrs. J. & M. Patrick, of Wandsworth, being the contractors to the War Office. The former guard-house was built in 1827 to replace the "Stone Kitchen," which had been fitted up in the Stone House—at one time the Spanish Armoury—situated between Coldharbour and Wakefield (or Hall) Towers, in the latter of which the Regalia is now kept. Coldharbour Tower, a gateway flanked by two drum towers,* within the Inner Ward, stood close by the south-west angle of the Keep, or White Tower. Some 9 ft. or 10 ft. below the present raised surface, and about 18 ft. south-west from that angle of the Keep, have just been found (together with human bones) some Roman masonry, and sections of squared hot-air flue-pipes, belonging, it is conjectured, to a building of no small importance. In one fragment the bonding tiles, laid in courses, are remarkable as showing, a-piece, a section of three layers—an inner streak coloured dark-blue, between two streaks coloured red. In a line with the Keep's western wall, and about midway towards the Wakefield Tower, is now disclosed a well, 90 ft. deep and about 5 ft. in diameter. The early twelfth-century masonry consists of rubble steined down to 15 ft. below the water level with Gatton ashlar—the firestone which was so largely used for dressing of the Kentish rag in the older portions of the Tower. To that date, too, is ascribed the curtain wall, mostly of rag, chalk, and rubble (and now exposed to view) extending northwards from the Wakefield Tower. That curtain wall was afterwards included in the Stone House, and against its western, or outer side, was built a picturesque row of gabled and bow-windowed houses with red brick chimneys and tiled roofs, the "Seven

* See W. Hayward's and J. Gascoyne's large-scale bird's-eye view of 1597, and C. Lemprière's plan, 1726, engraved by J. Basire.

Houses of Office," which are cited in the survey of 1532 as being then newly built, and were pulled down in 1827. The White Tower was built just within the Roman wall of London, of which a fragment may be seen at the base of the remains of the Wardrobe Tower, near the chevette at the south-east angle of the White Tower. We may add that it is expected the subway, wherein have been discovered iron and stone shot, mingled with portions of armour and human bones, will be found to communicate with the moat underneath the St. Thomas Tower ("Traitors' Gate"), where, in the east wall, are traces of an opening now closed up, and that the south side of Garden (or "Bloody") Tower, restored by Salvin, and which shows signs of decay, is being re-faced.

Dundas Castle.

THIS estate, extending over 2,000 acres, near Queensferry and Dalmeny, is offered for sale by private tender. The present mansion-house was built in 1818, of Humbie stone, after the designs in the Tudor style of William Burn, of Edinburgh. The adjacent old castle crowns the extremity of the basaltic range, known as the Rock-walk, of Dundas Hill, and is approached by an avenue nearly one mile long, from the road that leads to Kirkliston from Queensferry. Having been converted into a distillery about eighty years ago, the interior was greatly altered. The original early fifteenth-century building had been erected under licenses granted by the Regent, Robert Duke of Albany, and his nephew King James I. to the house of Dundas, who had been settled there since the reigns of Alexander I. and his brother David I., in the earlier part of the twelfth century. The castle, which is L-shaped on plan, contains two rooms in each of its four stories, some of them vaulted, with an arched entrance (latterly cut square) in the re-entering angle. The now flat roof is gained by a circular staircase surmounted by a round turret carrying a beacon post and watch tower commanding an extensive view of the Forth and the castles around. A few years after the building of the castle an addition, carried up to the same height, was made at the north-west corner, for a kitchen and offices. The hall, measuring about 29 ft. by 20 ft., on the first floor, retains its ancient fireplace, with side putt-stones to withstand the thrust of the segmental arch above the hearth. The later garden, on the south side of Dundas Hill, was laid out, it is said, by Switzer during his visit to Edinburgh, *circa* 1717. The old garden, the delight of Sir Walter Dundas, who succeeded in 1583, has, together with its four summer-houses, long since been destroyed. But one interesting relic was preserved — the Renaissance fountain and sun-dial set up by Sir Walter in 1623, and illustrated in Mr. W. W. Fyfe's "Summer Life on Land and Water at South Queensferry," 1851. The fountain, of the district freestone, and richly sculptured with masks and in low relief, has a base 7 ft. square, is 8 ft. 3 in. wide at the water-troughs, and rises to a height of 7 ft. at the top of the cornice, to which there is an ascent on one side by a flight of steps; the dial-pillar rises to 5 ft. in the clear above the cornice. In the Latin inscription (much worn), Dundas commends his house and its gardens to the enjoyment of his friends, avers that to be content with ordinary things makes us even with the world, and concludes —"*potiora aliis non invidemus.*"

Kensington Palace.

IN the Queen's Closet at Kensington Palace is hung an interesting set of paintings (removed there from the Queen's Presence Chamber at Hampton Court) of riverside and other views of London in the earlier years of last century. The pictures by W. James, which do not possess the artistic merits of Scott's similar views, show the Horse Guards and the parade ground, with Kent's Treasury Chambers, and Downing-street, from the north-west, by the old Gun-house; Denmark (or Somerset) House, with the Temple Gardens and water gate; the Savoy and Old Somerset House; the mouth of the Fleet with the Bridewell Bridge; York water gate and stairs, with the water-tower built in 1692; and Greenwich hospital and park, with Flamsteed's Observatory and St. Alphege parish church—designed by Hawksmoor, the steeple being by John James. There is another view of Greenwich Park and the Thames, perhaps by Danckers, with one of the Savoy and Somerset House which agrees in nearly every respect with James's picture. The chimney-piece in the room, a relic from Westminster Palace, bears in relief the Tudor rose, the arms of Queen Elizabeth, and her cipher, "E. R." The purchase of a guide-book is beyond the means of many who wish to see their sovereign's early home; but as most people can read now-a-days, we think that a little pains might have been taken to give gratuitously to the public—by way of affixed notices, or distributed leaflets—some particulars of the apartments and their contents, which the Queen has enabled them to see.

The Dutch Gallery.

THE small and rather heterogeneous collection of pictures at the Dutch Gallery in Brook-street contains two or three small works of rare beauty, among which is pre-eminent a picture by M. Fantin-Latour, "Solitude," one of his beautifully idealised little woodland scenes, with one nude figure not too much emphasised to break the harmony of the whole; a little picture which is quite a poem in colour. His larger work, "Sara la Baigneuse," we like much less; it is comparatively commonplace, which certainly can rarely be said of this artist. Then there is a fine Forest of Fontainebleau scene by Diaz, a small study of a waterfall by Rousseau, and a very good moonlight scene by Jongkind. Mr. Fisher's "Spring" we have seen before, here or elsewhere (or one very like it), but not his "Bathers," remarkable for the colour and light on the water. The small Corots exhibited are mostly early works; the "View of Dunkirk" is interesting as being so different from Corot's usual class of subject, and a not very good specimen of Decamps takes us back to an earlier era of French art. The large sea-piece by Herr Mesdag, "A Threatening Night," is not in his best way, and the foreground waves are rather poor in treatment—commonplaces of sea-painting. As to M. Monticelli's daubs on each side of it, called "Sunset" and "Autumn," one does not know what art is coming to when such things are exhibited as pictures. But the small painting first mentioned, by M. Fantin-Latour, is alone worth a visit.

The '91 Art Club.

THE club under this title is an association of ladies, who have held a small exhibition annually for three or four years, but only for a few days; and this year's exhibition, which opened on the 1st, is already closed. It would be worth while another time for the club to keep it open, say for a fortnight, and give people time to hear about it, for it is an exhibition containing a good deal of original work, and not (like some other ladies' art exhibitions) only consisting of what would not get a chance of exhibition elsewhere. Miss Anna Nordgren (the President) was one of the principal exhibitors, and among her eleven works was one, "Swedish Interior," of quite exceptional excellence. The best works exhibited were this and the "Sea Chase," a silvered bronze alto-relief by Miss Rope (Vice-President) who also had some other good exhibits. Among other works worth attention were Miss Bland's sketch "A Country Lane," Miss Hayter's "Early Spring," Miss Lloyd's "Portrait of Mr. Arthur Stewart," a masterful portrait to come from a lady's hand; Miss Birch's "Early Morning in Harbour," Miss Gore's "On the Ouse;" Miss Luxmoore's "Vivienne," a portrait of a girl with a violin; Miss Emily Duncan's "Burnham Beeches," a large landscape of considerable merit, and Miss Neumegen's study of an old woman under the title of "Mère Zon-bon."

Mr. Helleu's Exhibition.

A COLLECTION of Mr. Helleu's dry-point etchings, together with a large-size pastel portrait and some crayon drawings, is on view at Mr. Dunthorne's gallery in Vigo-street. Of the etchings there is nothing new to be said; Mr. Helleu's work of this kind is well known in London now, and always displays the same mastery of dry-point line, the same freedom of style and certainty of drawing, in his various sketches, chiefly of ladies; also it must be admitted, the same entire absence of sentiment or feeling, a failing which gives a certain kind of vulgarity to his portrait sketches; not vulgarity in an artistic sense, of course—they are quite the opposite of that; but they seem like the portraits of persons with only the outside get-up of a lady without the reality. The pastel portrait is more pleasing in this respect than the etchings. It is announced that the artist is about to come to London for a time, and perhaps it may become a fashion for ladies to have their portraits "etched by Helleu," and no doubt such portraits will always have an artistic value; but they will not satisfy every one.

HIGH HOLBORN TO THE STRAND:

SOME NOTES BY THE WAY.

As the London County Council are now acquiring, at an estimated cost of 569,000*l.*, the property lying between Holywell-street and the Strand, and are carrying out, at an estimated cost of 162,000*l.*, the widening of Southampton-row (east side) as sanctioned by Parliament last year, some historical notes on the sites affected may be of interest.

The two measures complement the entire project of the County Council as introduced this current session. The partially vacated area bounded by Drury-lane, Kemble (formerly Prince's), Stanhope and Blackmoor streets, 106,000 sq. ft., is being dealt with under the Council's Clare Market scheme, 1895; on the opposite side of Drury-lane is a cleared area traversed by Russell, Marquis, and Cross courts, about 79,000 sq. ft., which includes the burial-ground of St. Mary-le-Strand, and will be occupied, in part, by an enlargement of the

theatre, together with a block of flats and shops, to be carried out, at an estimated cost of 15,000*l.*, by, we understand, Messrs. Pilditch & Chadwick.

We can, perhaps, best indicate the range and scope of the Council's project by stating that they seek for powers affecting property which extends to and includes (*a*) on the east, the entire west sides of Kingsgate-street, New Turnstile, Gate-street (south arm), and Lincoln's Inn-fields (Newcastle, or Powis, House, excepted); all Portsmouth and Clare-streets, with Bear-yard, Vere-street Board Schools, and Sheffield and Twining (formerly Gilbert) streets; most of Houghton-street; New Inn, Danes Inn, and a part of St. Clement Danes churchyard; (*b*) on the west, the east side of Southampton-row, a line drawn from south of Holy Trinity Church, Little Queen-street, to the north-east corner of the junction of Wild-court and Chapel-place; all Wild-court, with the Board Schools, Little Wild-street, and Sardinia-street; part of Kemble-street; all Queen's Head-yard, Chapel-place, and Sardinia-place (lately King's Head-yard); the south-west sides of Great Wild and Stanhope streets; all Blackmoor-street; the north-east side of Drury-lane as far as Marquis-court; the north-east side of Catherine-street (in part), with all White Hart-yard and Little Catherine-street; the Gaiety Theatre and Restaurant, and the *Morning Post* offices.*

The two crescents radiate from and absorb Craven-buildings, Maypole-alley, and the Olympic Theatre. They cover portions of Drury-lane, Newcastle-street (formerly Magpie-alley), and Wych-street; and all of New Inn and White Hart-street. There is little doubt that in the end will be taken the whole property within the curve, comprising the Opera Comique and Globe Theatres, the rest of Newcastle-street and Drury, Windsor (formerly Denham-yard), New Church, Angel, and Helmet courts, Strand. The new thoroughfare absorbs the whole of Denzell-street, it crosses Vere, Stanhope, and Sardinia streets, and its middle line runs nearly due south from between Southampton-row and Kingsgate-street to the end of Craven-buildings and the Olympic Theatre, almost parallel with, and distant 230 ft. from, the west roadway of Lincoln's Inn-fields. We will briefly notice a few of the places and sites affected by the Bill, whose preamble has been passed by the Committee.

Kingsgate-street marks the route taken by James I. to Theobalds, and by Charles II. to Newmarket. Southampton-row, on the Bedford estate, leading from Russell-square past the ends of Vernon-place and Theobalds-road, formerly King's-way, to High Holborn, recalls the marriage of Lord Southampton, Shakespeare's friend, to Elizabeth Vernon, and the building, *circa* 1660, for Thomas Wriothesley, Earl of Southampton, and Lord Treasurer, of Bedford, or Southampton, House, where is now the north side of Bloomsbury-square; John Webb being the architect. The house, wherein his daughter and heir, Rachel, Viscountess Russell, passed her second widowhood, was pulled down after its sale by auction in May, 1800. Holy Trinity Church was built (1831) on the sites of Nos. 6, 7, 8, Little Queen-street, and enlarged and improved in 1887, by Mr. C. Forster Hayward; one may yet see at the rear the garden of the house, No. 7, wherein, on September 22, 1796, Mary Lamb in a paroxysm of insanity occasioned her mother's death. In Gate, formerly Princes-street, opposite, is the smallest square in London, consisting of but one house, now rebuilt, which bore a tablet inscribed "Princes-square, 1736." Here we are on the ground once styled Le Spencer's Lond, and cross the track of the Spencer Dig or Ditch, that flowed from Drury-lane (via de Aldewych) to Holborn-hill. The land, once owned by the Templars, was granted to Hugh Le Despencer, who forfeited it on attainder in 1326, it was restored to the family by Edward III., and ultimately granted by Henry VIII. to Sir Walter Mildmay, founder of Emmanuel College, Cambridge. Some identify Spencer House with the "Bull and Gate" coaching house, which was taken in 1863 by the Pneumatic Despatch Company, lying behind the houses rebuilt as College-chambers in 1879. Yet a claim in that respect has been advanced for the premises, pulled down at intervals in 1884-6, which stood where are now Nos. 15-6-7, Great Turnstile and 283, High Holborn. That house, since sub-divided, contained an early Jacobean chimney-piece, and is said to have been the home of Richard Penderel the Royalist.

Inigo Jones laid out Great Queen-street along a path skirting the Pightells and Purse fields, and leading to the Devil's Gap, Drury-lane, where it entered White Hart-close. The ground belonged to the jointure of the "Rose and Lily Queen," Henrietta Maria, whose badges were fixed upon the house-fronts, as we still see them banded in stone on to the brick Ionic pilasters of No. 2, Portsmouth-street, and Nos. 51-2 and 54, Lincoln's Inn-fields; her statues stood at the street's two ends. Bagford, who kept a book shop at Turnstile-alley, says the street was designed for a square, and that it was the first uniform street, the houses being stately and magnificent; Walpole says many of the houses were by John Webb, Jones's pupil. About ten or twelve were erected on the south side, *circa* 1624. The house now numbered 55-6 was by Webb. To the category of names rehearsed in the ordinary text-books we may add those of Lewis, the Mercutio of his age; Mrs. Clive, Miss Pope, Sir Joshua Reynolds, as Hudson's pupil, at No. 55-6; the Earl of Chesterfield, in 1657;* Sheridan in 1778; George Coleman the elder; at No. 5, on the north side, Miss Mitford, in 1828; and on the south side Frederick and John Crace.

Across the middle line of the new road stand the premises (rebuilt in 1880), Nos. 72-76, Great Queen-street, of a printing establishment familiar to readers of the *Builder*. Love & Wyman, Limited, as reconstituted in 1897, are the successors of Cox & Begg, who removed thither from the Savoy in 1760. Edward Cox and later partners were printers during a century and longer to the East India Company. Laman Blanchard and Douglas Jerrold had been their "readers." To Charles Wyman, who entered the firm upon John Lewis Cox's retirement, succeeded his two sons, C. W. Henry and E. Franck Wyman. Cox bought the press used by Benjamin Franklin (1723-6) when a journeyman printer at J. Watts', on the south side of Wild-court, where is now the Board School. Franklin lodged in Duke (since Sardinia) street, opposite the chapel. Some forty years later, on coming to England as delegate of the Pennsylvania Assembly, he visited Watts' to see his press, now in America, of which Mr. Charles Wyman presented a replica, perhaps also used by Franklin, to the Patent Office Museum in 1863.

Between Great Queen and Sardinia-streets are Wild-court and Little Wild-street, laid out in 1695 over the garden ground of Wild, or Weld, House, built early in Charles I.'s reign by Sir Edward Stradling, on two acres of Aldewych-close, and bought in 1651 by Humphrey Weld, a wealthy parishioner of St. Giles. The house, having a frontage of 150 ft. to Great Wild-street, and ground 300 ft. deep, contained thirty-three rooms, with garrets and cellars, as advertised "to be lett" in the *London Gazette*, 1694, No. 3010. The family used to rent it to foreign ambassadors and other persons of quality; being Roman Catholics, they often laboured under suspicion of harbouring Papists. On December 11, 1688, the day of James II.'s flight, the mob pillaged Weld House, where the Chapel Royal plate had been deposited, and burned the library and effects of Don Pedro Ronquillo, ambassador from Spain. Of Wild-court there are illustrations in the *Builder*, November 18, 1854.

From an upper window of the Soane Museum one gains a prospect unexcelled by that of any other equal area in the town for the measure and diversity of its architectural and historical interest. To our right hand is the work of Inigo Jones, Winde, and Kent; to the left are Jones's Gothic chapel, with buildings due to Taylor, Hardwick, and Scott; in front rises Barry's College of Surgeons, whilst the story of nearly four hundred years could be filled in the remoter space between Sir Thomas Lovell's gate-house at Lincoln's Inn, and the flèche of Street's great hall of the Courts of Justice.

In the fields below, on May 13, 1692, the Earls of Clare and Thanet fought the duel, which, with their lawsuit, arose after the death of their father-in-law, Henry, Duke of Newcastle, who had left the bulk of his fortune to his daughter, Countess of Clare; and there, as Burnet writes, William Lord Russell triumphed over death. In 1841 Sir Charles Barry prepared plans for new Law Courts to occupy nearly all the 7½ acres of the garden ground.

In September, 1613, the Privy Council, moved thereto by members of the Inn, direct the county justices to restrain certain proposed building, in defiance of the king's proclamation, in the Fields. To the south and north of a pathway from Great Turnstile to Fortifeue-lane (Sardinia-street) then lay respectively, the Cop and Purse Fields—jockeys' training grounds, the resort and haunt of idle and vicious vagrants, footpads, and their associates. Five years elapse, and a special commission is directed to Lords Verulam, Worcester, Arundel, and Pembroke, Inigo Jones, "et aliis pro supervisione camporum vocatorum Lincolnes Inn Fieldes." They are to frame and reduce the Fields both for sweetness, uniformity, and comeliness, into such walks, partitions, or other plots, and in such fashion both for public health and pleasure, as Inigo Jones shall, with the Sovereign's approval, design.* Of Jones's designs, covering 12 acres, only the west side, Arch, or West, row, was carried out. He began with Portsmouth House, at the south-west corner, where, at the end of a passage leading out of Portsmouth-street is No. 2, Lincoln's Inn-fields Chambers, a red-brick house that retains its original elevation with Ionic pilasters bearing on ornamented bands the cognisances carved in stone of the Queen Henrietta Maria. Turning northwards we see that some of Inigo Jones's houses have disappeared, the elevations and fronts of others have been altered and stuccoed; Nos. 54† (the Chapel Presbytery House), 55, 59-60 (Lindsey, or Ancaster House), and 64 have suffered least change. A line of piers with curtain walls and gates screened the forecourts; of the original rusticated stone piers, four, with their ball pinnacles, remain in front of Nos. 51-2, and four in front of Nos. 53-5. Lindsey House retains two of its fine red brick piers—Hatton says there were six—with carved stone finials, and two old lamp holders, but has lost the urns from above the balustrade, and the front is stuccoed. The house, built in 1640 for Robert Bertie, Earl of Lindsey, who fell at Edgehill, was sold by Robert, fourth Earl of Lindsey, advanced Duke of Ancaster and Kesteven in 1715, to Charles sixth Duke of Somerset, the "proud" Duke, who died in 1748 and devised it to his eldest surviving daughter Frances, Marchioness of Granby. It was inhabited by Spencer Perceval, and, after its conversion, in 1894, into chambers, by John Martin, the painter, who died there in 1854. Over the archway beneath Nos. 54-5, on each front is a tablet, "Dvke-street, 1648." In his early days Tennyson occupied chambers on the top floor of No. 55. John Forster lived at No. 58, described as Tulkinghorn's in "Bleak House." At No. 61, on the second floor, Thomas Campbell lived in retirement for nearly two years, 1828-30, after his wife's death. Cunningham says, in his "Life of Inigo Jones," there is an oil-colour view at Wilton showing Arch-row. In Mr. C. W. Heckethorn's book upon Lincoln's Inn-fields and around, reviewed in our columns May 16, 1896, is reproduced a print, *penes* Mr. Fancourt, of Highbury, who ascribes it to Hollar, which may represent the houses as Jones intended them to be. In our article of October 22 last upon the church of SS. Anselm and Cecilia (the Sardinian Chapel) we gave a reproduction of the silver medal by George Bower, *ob.* 1690, of which the reverse bears a beautifully wrought relief showing Arch-row, with its old elevations, the forecourt walls, the square railings, and the chapel in ruins. On August 2, 1885, we recorded the sale at auction for 13,000*l.* of No. 63, since rebuilt, extending to Queen's Head-yard in the rear, and covering 11,350 ft. superficial, which Mr. Norton, afterwards Speaker, and first Baron Grantley, bought in 1758 for 1,721*l.* In May, 1892, the freehold of No. 45, area 6,100 ft., realised 15,760*l.* In Portsmouth-street is the *soi-disant* "Old Curiosity Shop," a supposed relic of the Duchess of Portsmouth's dairy-house.

* For the last two named, as well as for the Metropolitan Electric Supply Company's premises, Sardinia-street, new sites will be provided.

* See the advertisement in the *Mercurius Politicus*, November 19-26, 1657, of the robbery of his "pictures" in gold and jewelled cases.

* Of the present and original railings which in 1735 replaced the posts around the square, two stone obelisks are in the Soane Museum. The garden, acquired by the L.C.C. for 13,000*l.* from the trustees appointed in 1657, was opened to the public on February 22, 1895.

† Nos. 5ca, 50, 56, 62-3, and 65—rebuilt; 51-2-3, 61, and 64—elevations changed; 51-2, 54-5, and 64—Ionic pilasters retained; 51-2, and 54—roses and fleurs-de-lis on pilasters; 57-8, one house, of stone, apparently later—six Ionic pilasters, and semi-circular portico on four fluted Doric columns; 66-7, Newcastle House, by Captain Winde, for William, Lord Powis, *circa* 1686. Compare with the elevation of Thanet House, Aldersgate-street, built by Jones in 1650, pulled down in 1882.

A history of London markets should give foremost place to the "New Market" founded in St. Clement's-fields *circa* 1654 by John, second Earl of Clare, whose successful contest in respect thereof with the City of London facilitated the establishment of similar markets west and north-west of Temple Bar. The original booths and sheds, "The Colonnade," stood where are now Newspaper-buildings and the St. Clement Danes and Clare Market parish-house (W. H. Smith Memorial), 1897-8, Messrs. H. & P. Currey, honorary architects. To account for the surrounding street names we should recall that Denzell Holles, grandson of Sir William Holleis, elected Lord Mayor in 1539, married Anne, sister of John Sheffield, Lord Sheffield. Their son John Holles, of Houghton, co. Nottingham, was created Baron Houghton in 1616, and advanced Earl of Clare in 1624—honours for which he is said to have paid the Duke of Buckingham 15,000*l.* He married Anne, daughter of Sir Thomas Stanhope, and, dying in 1637, left two sons, John and Denzell. Denzell was elevated Baron Holles of Ifield; John, second Earl, married Elizabeth, daughter and co-heir of General Sir Horatio Vere, Lord Vere of Tilbury, and died in 1665. His son Gilbert, third Earl, was father of John, fourth Earl, advanced Marquis of Clare and Duke of Newcastle, married Margaret, daughter and co-heir of Henry Cavendish, isecond Duke of Newcastle, and succeeded to the fortune of his kinsman, Denzell, Lord Holles of Ifield. He died in 1711. His only daughter, Henrietta, brought her property in marriage (1713) to Edward, Lord Harley, son and heir of Robert Earl of Oxford. In 1640 Charles I. licensed one Thomas York to build over St. Clement's-Inn-Fields, the inheritance of the Earl of Clare, the houses to be erected on each side of the causeway leading from Gibbon's Bowling-alley, or tennis-court, at the coming out of Lincoln's-Inn-Fields to the Reindeer-yard, leading into Drury-lane, not to exceed on either side the number of 120 ft. in length, or front, and 60 ft. in breadth, and to be of stone or brick. Three years afterwards the King licensed Colonel Gervase Holles to erect a specified number of houses and streets north-west of the later market square.* The Act of 1657 for restraint of new buildings in and about London reserved to the Earl of Clare, who lived in great state where is now Clare House-court, the privilege of erecting more houses upon the Holles estate. In course of time the market changed its character, giving place to slaughter-houses with their concomitant nuisances which rendered it an opprobrium and reproach. The last of the slaughter-houses was pulled down in 1889 for the Strand Union receiving workhouse and casual wards, in Bear-yard. A fire in Bear-yard, December 17, 1809, revealed the walls of the theatre opened on November 8, 1660, by Killigrew and the King's company, in Charles Gibbon's tennis-court. On the front of the house (recently demolished) at the corner of Gilbert-passage and Gilbert (re-named Twining) street was a fine stone carving, with date 1659, of the arms of Lord Clare; on the splayed angle of the baker's shop, No. 13, Clare-street, is a carving of two negro's heads with date and letters "1715, S. W. M."; at the south-west corner of Denzell-street, on the side wall of the "Royal Yacht" tavern, is the inscribed tablet erected in 1682 by Gilbert, third Earl of Clare, to the memory of his uncle Denzell, Lord Holles, whom Charles II. sent as ambassador to France. Vere-street Board School occupies the site of the "Bull's Head," the resort of the Artists' Club, to which Hogarth belonged, and of Dr. Radcliffe, who was there informed of his loss of 5,000*l.* in the South Sea venture, and made his memorable reply. In Stanhope-street was born, on December 12, 1779, Grimaldi, the clown; W. West kept his toy-theatre shop in Wych-street, and there sold the "1d. plain, 2d. coloured" prints so popular some fifty or sixty years ago. The "George the Fourth" has just been rebuilt, its neighbour, the "Black Jack" (or the "Jump")—the favoured haunt of Dick Turpin and Joe Miller—was demolished in August, 1896.

In Craven-buildings, opposite the site of the old "Cock and Magpie" and Drury-court, an early home of Nell Gwynn, lived Mrs. Bracegirdle, and after her, in the same house, Mrs. Pritchard, Mme. Vestris, and Thomas A. Arne, who, at No. 17, composed the music for "Comus," revived at Drury Lane in 1738. Craven buildings and the Olympic Theatre were erected on the ground of Drewry House, the residence of William, first Earl of Craven, who is supposed to have privately married James I.'s daughter, Elizabeth, after whom it was named, as a public house, the "Queen of Bohemia"; the theatre, first built by Astley, was rebuilt in 1890 from Messrs. Crewe & Sprague's designs. Maypole-alley commemorates the maypole in the Strand, opposite Drury-court. The pole set up by John Clarges, the farrier of Drury-court, in honour of his daughter's good fortunes, was given by Sir Isaac Newton in 1717 to the Rev. James Pound, Rector of Wanstead, for raising the big telescope which Hugon presented to the Royal Society. The Opera Comique and Globe Theatres cover the site of Lyon's Inn, an old hostelry, converted into an Inn of Chancery, *temp.* Henry VIII. The Architectural Association was founded there in 1842, and used to meet in the hall (1700) until, we believe, 1859. The carving of a lion on the corbel of a corner-post at the end of the narrow passage from the Strand to No. 36, Holywell-street (where is still the sign of the "Half Moon"), was secured about twelve years ago for the Guildhall Museum. In "Things I Have Seen, and People I Have Met," the late G. A. Sala describes the clearing of the well behind the "Old Dog," in Holywell-street (more probably the "Spotted Dog," Strand), in which was found, with a vast variety of things, a punch-bowl having a William and Mary guinea encrusted in the base, and a memorandum scrap of paper inscribed, "Dr. Goldsmith, 13sh. 10d." New Inn, whence Sir Thomas More migrated to Lincoln's Inn, has its origin in another hostelry, by sign of "Our Lady," acquired *temp.* Edward IV. by Chief Justice Sir John Fineux for the students of St. George's Inn, near the Old Bailey. Danes Inn forms a set of offices built on the site of the "Angel" inn (pulled down *circa* 1855) whence Bishop Hooper was taken to be burned at Gloucester in February, 1555. The Gaiety Theatre, opened on December 21, 1868, had been converted by the late C. J. Phipps from the Strand Music Hall, erected (on the site of the arcade named after the earlier Exeter Change) after the late E. Bassett Keeling's designs. The *Morning Post* offices were considerably enlarged four years ago from the plans and designs of Mr. H. O. Cresswell. The Globe Theatre (S. Simpson, architect) was opened on November 28, 1868.

* Confer the Reports, just issued by the Historical MSS. Commissioners, upon the Buccleuch and Hatfield MSS., as to the building grants.

THE ENGINEERING CONFERENCE.

THE second Engineering Conference held in London under the auspices of the Institution of Civil Engineers has been in session this week, on the 7th, 8th, and 9th. The meetings have been held partly in the Institution building in Great George-street, and partly in the buildings of the Mechanical Engineers and the Surveyors' Institution; the sections dealing with Machinery and Electricity having met in the Mechanical Engineers' building, and those dealing with Railways, Harbours, Mines, and Metallurgy in the Surveyors' Institution building. The Middlesex County Council also allotted to the use of the Conference their Council Chamber and Committee Room, where the subjects of Docks, Canals, Waterworks, Sewerage, Gasworks, and Shipbuilding were discussed.

The papers read are all short and eminently practical, the subjects being classified as follows:—

Section I.—Railways.

June 7.—"The Advantages, or Disadvantages, of Uniting the Lock and Block Signalling Appliances of Railways." By Alexander Ross, M.Inst.C.E.

June 7.—"Mountain Railways." By C. A. W. Pownall, M.Inst.C.E.

June 7.—"What is a Light Railway, and what Circumstances should Govern the Gauge?" By A. C. Pain, M.Inst.C.E.

June 7.—"The Various Systems of Railway Fog Signalling." By W. S. Boult, A.M.Inst.C.E.

June 9.—"Causes of Earth Slips in the Slopes of Cuttings and Embankments of Railways, and How to Prevent or Remedy them." By R. Elliott Cooper, M.Inst.C.E.

June 9.—"The Most Expeditious Method of Relaying the Railways of this Country, Involving the Least Interruption of Traffic, Having Regard to Safety and Economy." By Harry Footner, M.Inst.C.E.

June 9.—"Economy in Handling and Transport of Minerals." By R. C. H. Davison, M.Inst.C.E.

Section II.—Harbours, Docks, and Canals.

June 7.—"The Discharging and Reloading of Large Steamers." By W. H. Hunter, M.Inst.C.E.

June 7.—"The Length, Width and Depth, and Shape and Mode of Construction of Locks and Entrances and Graving Docks, Having Regard to the Increasing Sizes and Shapes of Vessels." By R. C. H. Davison, M.Inst.C.E.

June 8.—"Sandpump Dredgers." By A. G. Lyster, M.Inst.C.E.

June 8.—"Notes on the Effects of Waves on Breakwaters in Different Depths of Water." By W. Shield, M.Inst.C.E.

June 8.—"The Design of Breakwaters." By T. W. Sandeman, M.Inst.C.E.

Section III.—Machinery.

June 7.—"Forgings, and the Machines Used in Producing them." By E. S. Brett.

June 7.—"Compound Locomotives." By F. W. Webb, M.Inst.C.E.

June 7.—"The Relative Advantages of Different Kinds of Power for Tramways, Light Railways, and Motor-Car Traffic, both Heavy and Light." By Thos. Parker, M.Inst.C.E.

June 9.—"Cranes, and the Power to be Used with Them." By W. Pitt, M.Inst.C.E.

June 9.—"Machine Tools, with Special Reference to American and German Practice as Compared with English." By A. Greenwood, M.Inst.C.E.

June 9.—"Separate Condensing Plants for Factory Purposes." By Sir A. Seale Haslam.

Section IV.—Mining and Metallurgy.

June 8.—"Modern Improvements in Coal Mining: Winding from Deep Coal Mines." By H. W. Martin, M.Inst.C.E.

June 8.—"Modern Practice in Gold Mining." By T. H. Hammond.

June 9.—"The Influence of Casting-temperature on Steel." By R. A. Hadfield, M.Inst.C.E.

Section V.—Shipbuilding.

June 7.—"On the Practicability of so Constructing Merchant Steamers as to Render them Readily Available for War Purposes." By T. Harvard Biles, M.Inst.C.E.

June 7.—"Recent Developments in Cargo Steamers." By E. W. de Rusett, M.Inst.C.E.

June 7.—"Swift Passenger Steamers of Moderate Size." By E. L. Martin, M.Inst.C.E.

June 9.—"The Application of Mechanical Devices to the Riveting and Caulking of Ships; also the Material of Ship Rivets." By R. T. Napier, M.Inst.C.E.

June 9.—Graving-blocks and Appliances. By A. J. Maginnis, M.I.N.A.

Section VI.—Waterworks, Sewerage, and Gasworks.

June 8.—"The Use of Filtered Flood Water." By M. W. Hervey, M.Inst.C.E.

June 8.—"Sewage-sludge Disposal by Natural Agencies." By G. S. Woodhead, M.D.

June 8.—"A Consideration of the Rate per Head per Day of Supply in Different Towns, and of the Causes which Increase or Diminish it in Particular Instances." By J. Watson, M.Inst.C.E.

June 9.—"Labour Saving Appliances in Gasworks." By C. C. Carpenter, M.Inst.C.E.

June 9.—"Notes on the Recovery of Residual Products from Coal-Gas During the Period of Purification." By W. Foulis, M.Inst.C.E.

Section VII.—Applications of Electricity.

June 7.—"Methods of Electrical Transformation." By T. Swinburne.

June 7.—"Some Non-integrating Electric Meters." By Professor Ayrton, F.R.S.

June 8.—"Economical Transmission and Distribution of Electricity from a Distance." By H. F. Marshall, M.Inst.C.E.

June 8.—"Mechanical Traction by Electricity." By G. C. Cuningham, M.Inst.C.E.

The President, Sir W. H. Preece, in the course of a short opening address, referred to one or two questions of general interest to members of the engineering profession. The following is the concluding portion of his address:—

"The Lord Chief Justice's Bill for the suppression of illicit commissions is one welcomed by every member of this Institution, and it is most gratifying to find that no suspicion of improper practice has been adduced against our profession. We do, however, hear at times of a dangerous border-ground between consultation work and contracting, which is a pitfall to be avoided, and to be surrounded by danger-signals. Again, occasionally, and fortunately rarely, we find the diploma of the Institution converted into an advertisement; this the Council strenuously protests against in the best interests of the entire body.

The examination system, introduced just at the epoch of our first conference, has proved a most unqualified success, and it has been welcomed by none more than by those who are subjected to its troubles. During the last

session, 107 candidates passed the Associate membership examination, in addition to thirty-one who qualified by passing exempting examinations elsewhere, and sixty-five who satisfied the conditions of election by theses. Further, fifty-three passed the Institution examination for studentship, whilst 167 qualified in that respect by passing various recognised examinations. Thus we added 423 new names to our roll—all of whom satisfied the examination standards. The Council feel that the system of examination has enhanced the intrinsic value of the diploma of the Institution, and that it has added materially to the dignity and responsibility of the profession. This diploma has become so valuable and so necessary to the practising engineer, that occasionally would-be practitioners improperly assume the title of member or associate. Fortunately criticism is too wide-awake, and the public interest too well served by all who are jealous for the prestige of their profession, to permit deceptions of this kind to escape speedy detection.

The position of engineering has rendered it necessary for all new Universities—and especially for the Imperial University of London—to form a faculty of engineering, but the Council of this Institution has deprecated the idea of conferring degrees in engineering. Every engineer must acquire a knowledge of the scientific principles and the mental tools that form the bases and aid the operations of his profession, but he can be an engineer only by becoming an expert in its practice. Examination can test the former qualification alone, and this is what we have introduced. Practical training is not a matter amenable to examination. Hence we consider that degrees in science are quite sufficient to signify the successful completion of a University career, which should be strictly scientific ; and that the diploma of the Institution should be the criterion of that professional qualification which is the result of practice alone. And here may I mention that there is a tendency observable to avoid the condition that those admitted into our junior ranks shall be persons who are or have been bonâ-fide pupils of corporate members of the Institution. Further, no one can be said to be regularly educated as a civil engineer unless he has passed through the ordeal of the training to be acquired in the workshop and the drawing office. It would be well, for the comfort of the Council, if those who rather lightly, and sometimes thoughtlessly, sign forms for election, would first inquire if the conditions printed on the back of every form were properly complied with."

Among the sectional papers read on the first day those in Section I. included two subjects which are of practical interest to all travellers, of whatever profession. Mr. Bailly, in his paper on "Railway Fog-Signalling," after mentioning and classifying the various systems of fog-signalling now in use, among which however, "the man with the detonating signals" is still by far the most prevalent factor, recommended for consideration his system of magnetic signalling without contact, which operated a miniature semaphore on the engine, and was thus independent of manual agency, and fulfilled most directly the real object of such signalling viz. : to warn the driver of the train. A cognate subject was treated by Mr. A. Ross in his paper on "The Advantages, or Disadvantages, of Uniting the Lock and Block Signalling Apparatus on Railways." The object again was to suggest a means of doing away with the element of human fallibility in block signalling. The following extract explains the main point of the paper. After giving a description (hardly necessary, we should have thought, for his audience) of the working of the block system on a railway, Mr. Ross continued :—

"It may now be observed that the locking apparatus, with the levers working the points and outdoor signals, in themselves as perfect as human ingenuity and good workmanship can make them, are worked independently of the inside block telegraph signals, the only connecting link between the two being the signalman who works both ; and there is no physical obstacle to prevent him, in a moment of forgetfulness, giving outdoor signals in conflict with his indoor block instrument ; and the question raised for discussion is, whether it is desirable or not, to unite and combine the two systems, either mechanically or electrically, into one complete system in such a way as to ensure, not only unity of action at one signal-box, but also with the next box in the rear and in advance.

The conditions which should be fulfilled by an efficient 'lock' and 'block' arrangement may be stated as follows, viz. :—The rear signalman should not be able to lower his outdoor signals, or allow a train to proceed into the section in advance of him, until the signalman in advance has given him the necessary permission by unlocking the starting signal. The rear signalman, having received permission from the advance signalman to allow a train to proceed into the section, and having lowered his signals, and the train having moved forward on its journey, should be compelled to put his starting signal to danger ; and the lever working the same, on being put back to the normal position, should become locked in such a way that it cannot be used again without the permission of the signalman in advance. This operation should free the home signal of the rear section, so that a second train may be brought forward to his starting signal ; and, for the protection of this train, the home signal should be placed to danger, and, in the back stroke, become locked before a second train can be offered to the rear signalman.

When the first train has arrived at the signal-box in advance, and has passed his home signal, and the signal 'train entered section' has been received from the signal-box still further in advance, the signalman must put his own signal to danger before he can give 'line clear' to the signal-box in the rear for a second train. This applies when the section is from starting signal to home signal, but if the section is from starting signal to starting signal, the condition will apply to the latter . . . .

If the conditions enumerated above are secured, the advantages appear obvious, some of which may be stated to be as follows, namely :—

1. The impossibility of the outdoor signals being at variance with the indoor block instruments.
2. The rear signalman being compelled to forward a train to the man in advance.
3. The advance signalman being unable to accept a second train before his first has cleared out of the section.
4. Absolute protection for a train while in section.
5. Impossibility of the signalman in the rear forwarding any train in error.
6. The co-operation of three men in signalling a train."

Considering that some of the worst railway accidents have happened through the momentary failure of the human element in the machinery, even without anything that can be called carelessness, but from a mere trick of the brain, Mr. Ross's proposal is surely worth serious consideration. Mr. Pain's paper on light railways urged the standardising of one or at most two light railway gauges, so as to simplify and accelerate the supply of plant and rolling-stock for such railways.

In the machinery section Mr. Webb's short summary of the history and stages of development of his compound locomotive is interesting, but the most important sentence is the closing one, that the saving in fuel in these compound engines, where the waste steam from two high-pressure cylinders is utilised in a third low-pressure cylinder, is from 19 to 20 per cent., and that "this is confirmed by observations made in the United States." It has, we know, been vigorously denied that there is any material economy of fuel secured by the compound system ; but we can hardly fancy Mr. Webb and his very prudent and financially careful railway company going on building these engines, at an extra cost in construction, if the economy were not genuine and demonstrable.

Mr. Brett's paper on the making of large forgings by dies, which he regards as still in its early stages, and capable of much greater development, is of considerable interest.

The note contributed by Mr. James Swinburne on "Methods of Electrical Transformation" is a valuable one. The title, however, is rather a misnomer, for, practically, the only problem considered is the relative costs of the mains in different systems of distribution. The modern method of using rotary converters to transform alternating into direct current brings into prominence the question of whether it would not be more economical to use high-pressure direct currents and a dynamotor. Mr. Swinburne thinks that this question deserves serious consideration. A table is given comparing the costs of the copper mains for long-distance transmission for direct monophase, diphase, and triphase currents. In the unrevised proof of his paper the numbers for triphase currents are wrongly calculated, and this rather vitiates the argument. The assumption of sine waves is also made, an assumption which has been severely criticised by Mr. Swinburne himself on other occasions. His treatment of the cost of insulating the cables is excellent. He calls attention to the incipient discharges into the air that take place at the surface of small bare copper conductors at high pressure, and the consequent waste of power that is taking place.

Professor Ayrton's paper on "Some Non-Integrating Electric Meters" is a valuable and useful compilation of facts. Electric meters as used in electric lighting are not touched on, but he considers ammeters, voltmeters, and ohmmeters. He points out how soft iron instruments are affected by the shape of the wave of the applied electro-motive force, and how this can be compensated for to a certain extent by putting an inductive coil in parallel with them. He mentions the great improvement in the magnetic qualities of iron that has taken place in recent years, and anticipates still greater improvements in the future. Galvanometers of the moving coil type (d'Arsonval) are now replacing those with a moving needle. Professor Ayrton recommends the use of a transformer for measuring large alternating currents, but does not mention what formula is to be used. We suppose he goes on the assumption that the difference between the magnetising turns on the primary and secondary coils is constant at all loads. This assumption is only permissible at heavy loads on the transformer, and when its iron core is of the closed circuit type.

MAGAZINES AND REVIEWS.

THE *Art Journal* is chiefly occupied by Mr. A. C. R. Carter's article on the Royal Academy exhibition, somewhat too enthusiastic for our convictions. The frontispiece is Mr. Peacock's clever picture of a lady dancing, which we like better in the engraving than in the original. In the June issue of old articles and illustrations under the title "Fifty Years of Art" there is included an admirable paper by Hamerton on "Lake Surfaces," which few men had better opportunities of studying.

The *Studio* (May 15) includes an article on "A Scheme of Decoration for a Bachelor's Room," with illustrations by Mr. G. M. Ellwood, which show rather too much straining after clever tricks of line and effect. "Jewellery and other Enamel Work by George Frampton, A.R.A." shows some illustrations of excellent and interesting work, and Mr. F. Brangwyn's designs for stained glass are also of interest; one or two of these are to be seen in execution at the Grafton Gallery ; the defect that strikes us in them is a want of decorative quality of line in the details.

The *Architectural Review* (Boston) vol. vi. No. 5, contains an interesting article by Mr. Russell Sturgis, under the title, "How to Treat the Classical Orders." Mr. Sturgis seems to consider that, so far from the Classic Order having run its course, there is a new field open for it in connexion with iron trabeated construction. In the course of the article Mr. Sturgis remarks :—"Forty years of noting the opinions of the reading class of our public have convinced the writer of this, that the building most likely to be popular is a grave and simple one, as large as possible in its parts, relatively speaking, and with as much sober monotony of design as may be. To persons of such preferences as these, the charm of the classical orders is unquestioned ; they are the only means of giving to these buildings a variety and play of light and shade which their surface conception demands." Not quite the *only* means, we think. What about the Riccardi Palace, for instance? The number contains an illustrated article on "Port Sunlight" and its buildings. The principal illustrations are details of the interior finish of a house by Messrs. Stone, Carpenter, & Willson, which are very refined, but are simply the Adam style transplanted to America.

The *Berliner Architekturwelt* includes illustrations of architecture, furniture, textiles, pictures, and sculpture, recognising the connexion of every branch of art with architecture ; but the result is certainly not happy, especially as far as the architecture is concerned. The architectural designs are full of pretentious tricks of effect, compared with which the vagaries of the new school in England are tame and respectable.

The *Deutsche Kunst und Dekoration*, a new publication, contains a great many illustrations of decorative work of various kinds, often forcible and original, but unfortunately for the most part coarse and sensational in character.

The *Engineering Magazine* includes an article on the important subject of the "Hydraulic Transmission of Power," a means of applying power for public use which we believe is still in its early stages, in comparison with probable future developments. The writer, Mr. Ellington, considers in this issue

the question of what can be done with the hydraulic power when obtained. A good many illustrations of hydraulic machines accompany the article; but they would be of more practical value if they were in the form of technical sectional drawings, instead of mere photographs of the external appearance of the implements.

The *Antiquary* contains an article on the Royal Academy, "The Antiquary Among the Pictures," a study which might be very well undertaken from the archæological side, but we do not see that much light is thrown on the archæological accuracies and inaccuracies of painters, and when the writer tells us that Mr. Abbey's "O Mistress Mine" merely suggests lay figures and cleverness of draping he is displaying his own shortcomings of perception. In the same number Mr. H. P. Feasey commences a series of articles on "Curiosities in and around our Ancient Churches."

Scribner has an article by Miss Cecilia Waeler on "The Modern Group of Scandinavian Painters," and under the heading of "The Field of Art" some considerations as to the education of the artist in the United States. We observe that the writer, Mr. W. H. Low, condemns the prevalence of mere fagging over model-drawing, so many hours a day, and wishes to see less "grind" and more thought. We may quote the following comment in regard to this :—

"A vivid memory arises of the arrival in the studio where I was studying in Paris, of the youth who afterwards became its most distinguished pupil, and than whom to-day no one is more illustrious in modern art. He was barely seventeen, and he brought, to submit to our master as a means of admission to the ranks of his pupils, a great roll of drawings and sketches in colour. They were not conventional drawings from the cast or model, though doubtless he had made numbers of these, as we all must do sooner or later, but they were works which showed that the youth had the temperament of an artist and was worthy of the painstaking assistance in the development of his gift which he sought at the hands of the master. And, as I look back on the Paris of twenty years ago, I see clearly that, of the numbers of art students assembled there, every one who is known to-day, who has done anything to be known by, could have been admitted to study, if such had been the rule, by the submission of spontaneous original work."

The *Century* has little of artistic interest this month; it contains, however, an article on the always fascinating subject of "Niagara," by Mrs. Van Rensselaer, with illustrations by Mr. Castaigne.

Macmillan has a good article on the Rembrandt etchings at the British Museum, by Mr. C. Parkinson.

In the *Forum* is an article styled "American Art Coming into its Own," which strikes one as "a little too previous." The writer says that great attention was directed to the actual achievements of American art owing to the sale of Mr. Clarke's pictures last year, and that the public "recognises the value of the native note in native art." We should recognise it too, but where is it? Hitherto we seem only to have seen the French note in American art.

In the *Fortnightly* Mr. Archibald Little draws a parallel between "Two Cities: London and Pekin," chiefly interesting for its description of the Chinese city. He indulges in exaggerated pessimism about London, making it out as bad as possible, a kind of writing which is a cheap bid for the verdict of the class of readers who enjoy running down everything in their own country.

The *Contemporary Review* contains an admirable article by Mr. Brett on "Realism in Art," one of the best-reasoned papers on this side of the question that we have read. His position is that the sentiment which we look for in art depends on perfect execution, and is not any quality existing by itself apart from execution. We do not agree with it all, but as against the fallacy of "impressionism" it is a very powerful indictment, and an article which should be read by all who are seriously interested in painting.

To the *Revue Générale* M. Arnold Goffin contributes an eloquent and enthusiastic article on some of the early Florentine painters, more especially dealing with Fra Angelico.

The *Gentleman's Magazine* includes one of those useful popular summaries of points in astronomical knowledge which Mr. J. Ellard Gore contributes to this magazine from time to time. The present one is on "The Sun's Journey through Space," and embodies the results of modern observation (familiar to those who pay any attention to current astronomical science) as to the movement of the sun, the point in the stellar system towards which it is apparently moving, and the observed movements in some of the other "fixed" stars. There is one point in regard to this question on which we may venture a suggestion. There seems to be an inclination on the part of the astronomical world to assume that, as the planets move round the sun in orbits whose elements are strictly defined, so the sun and the other stars are revolving in defined orbits round a centre not yet defined or recognised. We would put the question: Is there really an analogy, in a mechanical sense, between the two cases? In the case of the solar system it is easy to see why a series of satellites of the sun, detached at successive periods from a central mass which still remains far greater than all their combined mass, should be strictly controlled in their orbit and rate of revolution (with the exception of some irregularities due to mutual perturbation) by this great central weight. But is there anything analogous in the system of the fixed stars? We at all events know of no central body of preponderating mass, which could control the stars as the sun controls the planets; if there were a luminous body of such comparative mass, surely even the immense distances of stellar space could not prevent its being recognisable to our vision as something far more prominent than any "first magnitude" star. No such body being apparent, may not the movement of the fixed stars be rather in the nature of a "drift," not subject to any such rigid and calculable law as that which governs the revolution of the planets round the sun? We do not profess, of course, in these pages to deal scientifically with astronomical questions; but the mechanism of the heavens is, or should be, of interest to every architect; and if our query should come under the notice of any scientific astronomer, we should be interested to know his views on this point.

The *Quarry* commences an essay on "The Mineral Industry of the United Kingdom," illustrated by a geological map of England and sections of strata.

Knowledge includes an article on "The Hereford Earthquake of 1896," by Mr. Charles Davison, who has long made it a special business to collect and compare data as to earthquakes and their phenomena and effects.

THE ARCHITECTURAL ASSOCIATION SUMMER VISITS:

COBHAM HALL AND CHURCH.

ON the 3rd inst. a party of about thirty members of the Architectural Association, under the guidance of Messrs. G. A. Lansdown and F. W. Aldwinckle, junior, travelled down to Sole-street Station to visit Cobham Church and College, and Cobham Hall.

Arriving at Cobham village at about 1 p.m. the party first proceeded to the "Leather Bottle" inn, with its Pickwick parlour, made famous by Charles Dickens. After inspecting the parlour, which is profusely decorated with prints of all kinds, representing the characters of Dickens' novels, and with numerous portraits of the celebrated author, luncheon was served. The church was afterwards visited. It is a structure remarkable for its fine and spacious Early English chancel, which contains a superb altar-tomb, placed centrally before the communion-table. The tomb is an exceptionally rich example of early Renaissance work. It is to the memory of the Lord Cobham who founded the college close at hand, and bears upon its top effigies of Broke, Lord Cobham, and his wife. On each side are five niches, each with a kneeling figure of a knight. These figures represent members of the family of Broke, or Brooke, and they are all dressed in coats fully blazoned with their arms. Each figure kneels upon a cushion facing eastward. The cushions are beautifully decorated with arabesque work formed by a black inlaid cement. The Ionic columns at the corners of the tomb are quasi-fluted with the same material. At the ends are more figures and shields of arms. All the armorial bearings both on the coats and shields are blazoned in inlaid colour, and to any one versed in heraldry must form an extremely interesting study. On the floor of the chancel west of this tomb are a series of fine brasses, including that of Sir Nicholas de Hauberk, a reproduction of which was, not many years ago, given in *The Builder*. The architectural features of the chancel are of great interest, including, as they do, the beautiful lancet windows at the sides and in the east end, a beautiful double piscina enriched with the dog-tooth ornament, as well as a triple sedile and another piscina, both of Perpendicular work. There are the remains, near the east end of the south wall, of a stair, which is said to have led up to a rood loft, but what its real purpose was is not easy to say. In the vestry are some remains of well carved figures, which are said to have formed part of the decoration in connexion with this stair. Cobham College, formerly an ecclesiastical building, is now used as an almshouse. It consists of a building enclosing a quadrangle, the dimensions of which are about 55 ft. by 65 ft., the height of the walls to the eaves being about 17 ft. Beyond this building are the remains of another building, where are to be seen a very large arched lintel of a kitchen fireplace and a doorway having above it a very good coat of arms of the Brooke family, carved in stone, and surrounded by the Garter with its legend. This is protected from the weather by a canopy of Jacobean design, supported on consoles. It dates from the last years of the sixteenth century.

After inspecting these interesting buildings the party proceeded across Lord Darnley's park to Cobham Hall, permission to view which had been kindly granted by his lordship. The hall, which has been illustrated in Messrs. Belcher & Macartney's book on the later Renaissance architecture of England, is well known from that and other representations. The older part of the house consists of buildings forming three sides of a square. The two wings are older than the central portion, and were built by the Cobham family; they are of red brick with stone mullioned windows and dressings, and have interesting central features in the centre of each facing the enclosed garden. The central portion of the house was built by or for the Darnley family, to whom the place was granted after the attainder of Lord Cobham in the reign of James I. Later additions by Wyatt form the present entrance corridor and the stables in the rear. The interior of the house contains some very fine marble mantelpieces and a quantity of pictures, many of interesting persons and not a few of great beauty and value, Rubens and Vandyke being the authors of several.

The most interesting feature of the interior is the gilded hall, a very fine cubical room decorated in marble and gilded plaster. This is known as the music room, and it contains a painting by Vandyke of two Dukes of Lennox, which is placed over the fire mantel, and is perhaps the finest picture in the house. The interior of the house generally, as far as the visitors were permitted to see it, does not contain panelling or other architectural decoration of such interest as might be expected from the external appearance; the internal finishing being, with the exception of the mantelpieces, coeval with Wyatt's work. The visit was pronounced by those who took part in it to have been of very great interest, and the thanks of the party are heartily due to those gentlemen who organised and brought it to so successful a conclusion, also to the Vicar of Cobham, who kindly had the brasses in the church uncovered for inspection, and to Lord Darnley for his permission to view the hall.

ASSOCIATION OF MUNICIPAL AND COUNTY ENGINEERS.

THE members of the Association of Municipal and County Engineers held a Yorkshire district meeting at Sheffield on Saturday, June 3. This was the first occasion on which Sheffield had been visited by the Association, and consequently a good deal of interest centred in the meeting, which was very largely attended by members from various parts of the country. Mr. O. Claude Robson, of Willesden, President, occupied the chair, and amongst those present were Messrs. C. F. Wike, Sheffield; J. P. Barber, Islington; E. G. Mawbey, Leicester; E. Pritchard, Birmingham; J. Price, Birmingham; J. Cartwright, Bury; F. Baker, Middlesbrough; T. W. Stainthorpe, Totnes, Devon; A. D. Greatorex, West Bromwich; C. H. Cooper, Wimbledon; J. Cook; Lancaster; B. Godfrey, Rotherham; G. T. Lynam, Burton-on-Trent; T. H. Yabbicom, Bristol; and many others.

The Lord Mayor of Sheffield (Councillor

Clegg), in welcoming the members, said he was exceedingly glad to have an opportunity of welcoming such an important body as that represented. In consequence of the very great powers which were in the hands of Corporations, the positions of surveyors were becoming increasingly responsible, and it was exceedingly necessary that whenever information could be obtained which would add to the knowledge of members of their profession, it was desirable it should be obtained. Less than twenty-five years ago Sheffield had not realised the responsibilities due to the fact that it was the sixth largest town in the kingdom, but within recent years they had realised those responsibilities and taken steps to improve the town in a way highly creditable to them as a Corporation. When he informed them that since 1875 they had spent upon public improvements and works no less a sum than four and a half millions of money, only half of which was expended on works of a profitable nature, he thought they would agree with him that Sheffield, at any rate within that time, had done a very great deal for the interests of its citizens.

The President (Mr. Robson), in acknowledging the civic welcome, tendered the Lord Mayor very hearty thanks for the reception which he had accorded to the Association. During the twenty-seven years of their existence they had visited most of the principal towns throughout the country, and it was no secret that for some years past there had been a strong desire on their part to visit Sheffield—a city essentially of interest to all engineers by reason of its large industrial works, but of especial interest to them on that occasion by reason of the very large municipal works which were being carried out under the supervision and control of their very distinguished Engineer, Mr. Wike.

The President then announced with regret the retirement of Mr. T. W. Stainthorpe from the position of hon. secretary for the Yorkshire district, as he had taken an appointment in Devonshire. He moved a vote of thanks to Mr. Stainthorpe for the able and energetic way in which he had acted as secretary for the past seven years.

Mr. F. Baker, Middlesbrough, seconded the vote of thanks, which was accorded with acclamation.

Mr. Stainthorpe, in acknowledgment, said his work for the Association had been a labour of love, and he hoped his successor would have an equally pleasant experience of the office.

On the proposition of Mr. Cox, of Bradford, Mr. S. Stead, Borough Engineer of Harrogate, was unanimously elected secretary for the district.

Municipal Work in Sheffield.

Mr. C. F. Wike, C.E., City Surveyor of Sheffield, then presented a paper on ten years of municipal work in Sheffield. After giving some general statistics with respect to the city, Mr. Wike stated that the whole of the highway and road work was done by the Corporation workmen, about 1,900 of whom were employed under his department. With certain exceptions, the main streets were, twenty years ago, narrow and tortuous; this description still applied to some of them, but great improvements had recently been made both in width and line, and these were still going on on an extensive scale. The gradients, while favourable for purposes of drainage, made the question of a suitable form of paving a most difficult one; and there was a great variety of pavement in Sheffield. From inquiries made some time ago, it appeared there were only one or two provincial towns with a larger area of wood paving than Sheffield. The proportion of macadam, unfortunately for the district rate, also ranked high. Many streets had gradients of 1 in 10, 1 in 8, and even 1 in 5, and when there was a heavy rainfall the macadam could not remain upon the surface of such streets, but was washed either upon the low-lying roads or into the sewers, from which eventually it had to be removed at great cost. About 300,000 tons of macadam had been used during the last ten years, a large proportion of which had disappeared in the shape of dust, or had been carted away as mud, or deposited in the sewers. During the last five years the question of the best kind of pavement to be used led to many discussions both in the Council and out, and, though no general principle had been settled, the rule broadly was to lay granite where the traffic was heavy and the gradients would permit (1 in 30 being the limit, except in special cases), to lay wood on some of the more important business streets, and in others gritstone paving or macadam. The comparative life of the different kinds of pavement in streets of heavy traffic had been granite twenty-one years, wood (red) about seven or eight years, gritstone rarely more than five or six years in main streets, tar macadam in busy suburban roads over four years, and dry macadam entirely according to traffic and other considerations. Where wood was laid against tram rails the life was very uncertain. Pavement of this kind laid within the last nine months was already grooving, as well as gritstone and Inverkeithing laid about the same time. Within the last few years a whinstone from the Inverkeithing quarries had been introduced, and had found favour on account of its quietness and non-slipperiness. It, however, wore very rapidly, especially under traction-engine traffic or along tram lines. In one case, where it was laid under the latter condition, it wore ¾ of an inch below the level of the rails in less than twelve months. His experience tended strongly to prove that no material would stand next to tram lines but granite, and even that after a time became grooved. Referring to the tramway system, Mr. Wike mentioned that the company's lease ran out in 1896, when the Corporation obtained an Act authorising them to take over the working of the lines which had always belonged to them, the company paying a rent of 100*l.* per mile of route per annum. The first step was to introduce additional penny fares and to increase the distance traversed for that sum—a policy which met with immediate success. In September, 1896, a deputation visited a large number of English, Scotch, and Continental cities to inquire into the various systems of traction in use, and the unanimous conclusion was that the overhead electric system was the one for Sheffield—a view confirmed by the Council. In 1897 a further Act was obtained authorising the construction of about twenty-seven miles of additional tramway. Wherever practicable double lines were included, and the wisdom of this course had already been thoroughly proved. The estimate for the work, including electrical equipment, exceeded 600,000*l.* The actual work was started in January, 1898, and since then about eleven miles of route had been constructed. The power station was approaching completion, and a contract had already been let for an extension to more than double the original size, viz., 190 ft. by 110 ft. The first instalment of the generating plant now being fixed was of 900 horse-power. The whole of the works, except the erection of the car-shed and power-house, but including the electrical bonding of the track and the laying of pipes to carry the cables, had been carried out by the Corporation workmen. The Corporation management of tramways in Sheffield had been a great success from a commercial point of view. During the last year of the company's lease the results for the nine and a quarter miles of route were: Gross receipts about 40,000*l.*; gross profits, 7,441*l.* For the last financial year under the Corporation, with nine and a quarter miles for seven months and ten and three-quarter miles for the other five, the figures were: Gross receipts, 57,503*l.*; profits after allowing for service of debt, 13,884*l.* The Sheffield sewage works were at present on the lime precipitation principle. The quantity treated per day had reached as much as 25 million gallons, the average dry weather flow being about 17½ million gallons. One of the greatest disadvantages of this method of treatment was the quantity of sludge produced. In Sheffield this amounted to from 1,000 to 1,200 tons per week; and though liberal terms had been offered to farmers and others who might use it as a manure, very little was disposed of in that manner. The only practicable method of disposal had been found to be by sending the sludge by rail to a large tip in the valley some few miles below the works, and since 1892 about 250,000 tons had been so disposed of. It was divulging no secret to say the lime treatment only did not now receive the approval of the Local Government Board, and Sheffield was, therefore, at present experimenting. Lately these experiments had been in the direction of bacteriological treatment, and good results had so far been attained. The experiments commenced in November, 1897, when two of the precipitation tanks were filled, one with slack and the other with coke, and worked on this principle. The results were considered sufficient to justify a more extensive experiment. There were now three coarse tanks, each 220 ft. by 75 ft. and three fine filters through which the effluent from the coarse tanks was passed. The first tanks were filled with rough coke to a depth of 5 ft. The bottoms of the tanks were drained by one 9-in. main drain (open socket joints) in the centre and 3-in. land tiles 6 ft. apart laid herring-bone fashion at each side. These tanks worked on an 8-hour cycle as follows—filling 1¼ hours, 2 hours rest, 3 hours for emptying, remainder of 8 hours at rest. At present only two of the tanks were completed, with a capacity of one million gallons per day, and the third tank would take half a million gallons per day. After leaving these tanks the effluent passed through a secondary filter, of similar construction to the others, but filled with fine coke breeze to a depth of nearly 4 ft. Three hours were occupied in discharging the contents of the coarse bed into the finer one and after about 1½ hours rest the smaller tank was emptied into the effluent culvert. As these tanks had only been in work about two months it was not proposed to speak as to the cost of the treatment, but so far as the experiment had gone no sludge had been perceptible.

Street improvements had formed an important part of recent municipal work in Sheffield. Five years ago High-street was only 31 ft. wide in the narrowest part, but it had now been widened to a minimum of about 80 ft. at a cost of about 60,000*l.* net. The minimum price paid per square yard was 22*l.* (this being part of a special arrangement) and the maximum 103*l.*, neither of these prices including business compensation. The land resold as surplus realised from 25*l.* per yard (including a large proportion of backland) to 65*l.* and one lot, consisting of a few yards of frontage, fetched as much as 206*l.* per yard. It was found that in those cases where the Corporation purchased the whole of the property and resold the surplus the result was much more satisfactory than when they contented themselves with taking only the actual land required. Another important improvement was one known as the West Bar scheme, the total estimate for which was approximately 300,000*l.*, and the width of the improved street would be 60 ft. for the greater part.

The constructional works had included four new bridges, the clearing of an unsanitary area of about five acres, known as the Crofts, at a cost of between 80,000*l.* and 90,000*l.*, and the erection of dwellings on the flat system to house about 600 persons; of baths; of a branch free library; two additional police stations; and of two refuse destructors. These two destructors would on the average be capable of dealing with about 300 tons of refuse per day out of the 400 odd tons collected. It was proposed eventually to have a third destructor to consume 150 tons per day further.

Sheffield was probably as well supplied with parks and recreation grounds as any town in the Kingdom, and these were much appreciated in a city, parts of which were so smoky and densely populated. There were eight parks and seven recreation grounds with a total area of about 325 acres. One of the parks was given by the late Mr. Mark Firth, and another, togther with five of the recreation grounds, was given by the Duke of Norfolk. The remainder cost, in the first instance, about 70,000*l.* The three largest parks, with an area of 138 acres, had been acquired and laid out during the last ten years. One of the parks contained the public museum and the Mappin Art Gallery—the latter the outcome of a bequest by the late Mr. J. N. Mappin. In another park was the Ruskin Museum, founded in Sheffield by Mr. John Ruskin, and now transferred to and managed by the St. George's Guild and the Sheffield Corporation. No description of the parks would be complete without a reference to Norfolk Park, the largest park in the City. Although this was the property of the Duke of Norfolk it was open for the free use of the public, and was maintained entirely at the cost of the Duke. The annual cost of maintaining the parks and recreation grounds was only 5,500*l.*

Mr. J. P. Barber, Islington, proposed a vote of thanks to Mr. Wike for his paper. He said that every one knew that gritstone setts could not possibly stand very heavy traffic, neither were they economical. If a satisfactory road were to be made and maintained with heavy traffic, and true economy were aimed at they must use granite and discard gritstone. His experience in London was that the Guernsey or some of the Leicestershire granites were the most economical that they could obtain in

the Metropolitan district. Even Guernsey granite setts became grooved in three or four years in thoroughfares over which there was heavy traffic. He was bound to say that the main thoroughfares of Sheffield were in no respect behind some of the best-paved streets in the Metropolis. It seemed to him that all the requirements of the traffic had been carefully considered and there had been skill and discretion in deciding as to the material to be used and great care exercised in the way that material had been laid down.

Mr. Mawbey, Leicester, who seconded, said he might add his opinion to that already given that the town could not do better than adopt the two kinds of paving which Mr. Wike was advising—granite and wood. Wherever they could afford the luxury of wood they preferred it. With regard to the bacteriological treatment of sewage, it was satisfactory to hear that the result of Mr. Wike's experiments were satisfactory. He believed there was a very great future indeed for the bacterial system. They had been carrying out some experiments at Leicester both with the clarification and the final treatment of sewage and they found that the rough beds for clarification had far exceeded any chemical treatment they had had anything to do with.

Mr. F. Baker, Middlesbrough, said that with the new overhead electric system of tramways between Middlesbrough, Thornaby, and Stockton, they had adopted a road gauge of 3 ft. 6 in. instead of the ordinary 4 ft. 8½ in., to keep the ordinary vehicular traffic from using the tram track.

Mr. Cooper, Wimbledon, stated that he was reforming a bacterial bed filter at Wimbledon which was constructed in 1876. The filter was formed of burnt ballast, and they found that the sludge had penetrated right through the ballast to the bottom of the filter, thus compelling them to clean it. He had besides two acres of filters laid with 3 ft. of burnt ballast with a little soil on the top to assist the distribution of the sewage; and he was engaged in laying down two more acres of filters which would not be quite so deep and would not have anything on the surface. He could not help thinking that the work of a filter was done on or near the surface, and that the work done in the first quarter of an inch was very much more than in the second quarter, and that as it got lower the efficiency fell very rapidly.

Mr. E. Pritchard, Birmingham, remarked that Sheffield had taken a bold leap with respect to the municipalisation of the tramways. Although the overhead system of electric traction might not be considered æsthetic he believed it to be the best for Sheffield. With regard to the gauge, he did not care what they did, whether they made it 3 ft. 6 in. or 4 ft. 8½ in., the butcher boys, who were the worst offenders, would run one wheel of their carts in the groove of the rail and cut up the track. The use of steel blocks alternately with wood by the side of the rail had the effect of preventing the cutting up of the track, but there was the disadvantage of the disagreeable noise made by vehicles.

Mr. J. Price, Birmingham, said he took it that the choice of pavement was a matter of policy to be determined by the Council, and not by the official, and depended upon whether the town could afford to pay for a certain class of pavement or not. A well-constructed granite pavement was the most economical pavement going; but if the circumstances permitted, and they could afford it, most of them would favour a good wood paving.

The Chairman said the experience of all of them was that, given a certain amount of heavy traffic, granite setts were distinctly cheaper, and they would probably be using granite setts where they now used wood in London but for the fact that they were a more neurolic people than they were in the North of England.

The vote of thanks having been passed,

Mr. Wike said he had to thank the members of the Council for the great support they had given him during the past ten years, and also the members of his staff who had worked exceedingly hard and conscientiously. The Corporation had in the highways staff a body of men who were thoroughly in earnest in doing their best for Sheffield.

The Lord Mayor then entertained the President and members of the Association to luncheon in the Town Hall. The postprandial proceedings were commendably brief, as the members had a long round of visits to make to places of engineering interest.

The visits made during the afternoon included the tramways in course of construction in Fitzalan-square, the tramway power station at Kelham Island, Ball Bridge, the Walkley tramways, the Glossop-road baths, the destructors, the sewage works, where tea was provided, and the Brightside baths. The inspection of works in progress and completed proved of the greatest interest, and the meeting in every respect was a complete success.

THE BUILDING TRADE DISPUTE.

ON Saturday last special meetings were held in many of the London and provincial branches of the National Association of Operative Plasterers, when the members were handed ballot papers, on which they were requested to record their votes either for or against the settlement arrived at on the 30th ult. between the representatives of the masters and the men's delegates. It is considered certain that the operatives will sanction the settlement of the dispute on the lines already agreed upon. Should the result prove to be in favour of returning to work, an intimation will be immediately sent to the Master Builders' Association, who will then throw open their shops to the Union men. It is therefore highly probable that the lock-out order will be withdrawn on June 12.

A joint meeting of members of the National Association of Master Builders and representatives of the several trade unions in the industry was held on Monday in Derby. The meeting had been arranged for the purpose of the preparation of a basis of discussion for a larger conference proposed to be held in London on Thursday; but no basis has been prepared. The terms of settlement as agreed upon at the conference with the Operative Plasterers were, with some minor alterations, laid before the representatives. The representatives of the Master Builders' Association, having already accepted these terms as applied to the Operative Plasterers, were prepared to practically adopt them as the basis for discussion at a conference with the whole body of trade unions. The representatives of the trade unions, however, after they had gone carefully through the proposals, which, it was understood, included the appointment of Mr. E. T. Cook as an independent chairman, decided, it is stated, that they could not adopt them as a basis. The terms, as accepted at the conference with the Operative Plasterers in London, and as confirmed by the statement issued by the Yorkshire employers, practically allege certain practices against the whole of the unions, and that these practices are universal the governing bodies of the unions deny. Their representatives, in fact, at a meeting held in Manchester on May 15, "condemned in the strongest possible terms the untrue and misleading statements issued by the Yorkshire Federation of Building Trade Employers." Their representatives accordingly declined to discuss terms of settlement which would apply to allegations of practices the truth of which they denied.

A considerable number of members of the National Association of Master Builders travelled to Derby and met at the Midland Hotel, where the "preliminary joint meeting" with some of the representatives of the trades unions was also held. The joint meeting was attended by three members only from either side, with the secretaries—namely, Messrs. B. Greenwood (London), R. Neill (Manchester), W. Nicholson (Leeds), and J. Hassal, secretary, employers; and W. T. Wilson (Amalgamated Society of Carpenters and Joiners), W. Matkin (General Union of Carpenters and Joiners), J. Batchelor (Operative Bricklayers' Society), and G. B. Cherry (Operative Plumbers' Association), secretary. The decision of the representatives of the trade unions not to accept the proposed basis of discussion was communicated to the representatives of the employers. The representatives of the trade unions desired as a simple basis for discussion a proposal for the establishment of a Joint Central Conciliation Board to which all local disputes might be referred. This, it was thought, would allow the several districts to retain their local autonomy, and would at the same time provide a safeguard against the local adoption by either side of measures calculated to presently jeopardise the interests of the whole industry. When it was apparent that the representatives of the trade unions were not disposed to adopt the proposed basis of terms of settlement for discussion, the following resolution was adopted by the joint meeting:—

"That, inasmuch as the representatives of the trade unions are not willing to adopt the proposed basis of conference, they be requested to submit within fourteen days their own basis for the consideration of this Association (the Master Builders' Association), and that this Conference be postponed accordingly."

A meeting of the Council of the Yorkshire Federation of Building Trade Employers was held at the Montgomery Hall, Sheffield, on the 6th inst. The attendance included representatives from all the centres covered by the Federation, and the chair was taken by the President (Mr. John Spink, of Sheffield).

The first business was the reception of the report of the Plasterers' Settlement, and the meeting expressed general satisfaction with the understanding which had been arrived at. The abortive attempt at Derby on the preceding day to settle the basis of discussion at the proposed London conference next came under discussion. Individual members expressed the opinion that the resolution of the Manchester conference of trade unionists suggesting a meeting with the federated masters was merely a device to prevent a national lock-out. This feeling was afterwards embodied in the following resolution:—

"The Yorkshire Federation of Master Builders are of opinion that the operatives, at their Manchester meeting, when they proposed—'that we are prepared to meet the National Association of Master Builders in open conference, and discuss the questions at issue'—were not making a bonâ fide offer for a conference, because the men's delegates at Derby yesterday refused to accept, as the basis of that conference, the suggestions made by Mr. Cook, the editor of the London *Daily News*, who is an independent and impartial intermediary."

It was reported that the representatives of the trade unions were to meet in Manchester on Monday to prepare a basis for any conference between them and the National Federation of Employers, and in view of this it was resolved to ask the Northern Centre of the employers to hold a meeting as soon as convenient after the proposals of the men are made known.

The lock-out in Yorkshire, it was stated, would be maintained until some satisfactory understanding is come to with the men on the question of a general conference. The reasons given for declaring a lock-out in Yorkshire, as stated in the employers' manifesto, were that the men had imposed "tyrannical practices" upon the masters. The meeting had before it a list of these alleged practices, and resolved to print and publish them throughout the country, every instance being stated to be fully authenticated. The following examples are extracted from the list. In fairness it should be stated that the masters are in each instance possessed of the name and place of business of the employer or employers concerned:—

"A firm of contractors erected a steam mason. The men immediately struck, and demanded that the machine should be taken out of the town. After considerable pressure by the local Master Builders' Association, terms were made restricting the output, as follows:—(1) The machine was not to be worked if six masons were not employed; (2) no overtime whatever to be allowed; (3) the machine only to plane three sides of any one stone, and do no moulding work whatever; (4) if the men be stood for work at any time, the machine must not be working.

Of the men employed on a contract in the East Riding, part lived near the work and the remainder were engaged from an adjoining town. The latter, in order to catch a train on Saturdays, ceased work at twenty minutes to twelve, and insisted that the local men, who were within three minutes of their homes, should leave at the same time, under penalty of the job being stopped.

Some time ago the whole of the master joiners in Hull were forbidden to use Canadian pine doors, the reason given being that they were made under unfair conditions of labour. A strike was threatened in the alternative. The employers have since ascertained that the men engaged in making these doors earn four guineas a week.

A joiner in the employ of a firm for twenty-one years was during that time appointed in succession outdoor and general foreman. On his receiving the latter berth, ninety-two joiners struck work for three weeks because he would not join their union. He then gave way and joined the Society, but was fined 2*l.* for not having done so at once.

A builder was compelled to discharge a non-society plumber under threat of a strike of joiners, plasterers, and labourers.

Five labourers, who were employed to supply three bricklayers, failed to keep them going. After the foreman had complained two or three times

two of the labourers were discharged. Two of the remaining three left at an hour's notice, and used bad language to the employer before going. They returned, along with the labourers' delegate, who complained that the contractor was working short-handed. He offered to take back the two men whom he had discharged, but the delegate insisted that he should first reinstate the two men who had left work on their own account and had insulted him. On this, the employer refused to take any of them back, and the delegate refused to allow any man to start on the job.

A contractor became embroiled with a labourers' society because of employing temporarily on a chimney shaft four non-union men with special knowledge of the work. As a matter of fact, the men were desirous of joining the Society, but were refused admission, on the ground that the whole of the existing members were not then at work. The men had to be discharged.

The lock-out is now declared to be in force in every principal town in Yorkshire, with the exception of Bradford. The Federated Masters have received from the architects, it is stated, an assurance of sympathy, the latter expressing the view that they ought to extend the lock-out to the whole of the men.

ARCHITECTURAL SOCIETIES.

THE ARCHITECTURAL ASSOCIATION OF IRELAND.—A general meeting of the Irish Architectural Association was held at the Grosvenor Hotel on Wednesday, May 31, Mr. J. H. Pentland in the chair. The Hon. Secretary read the result of the ballot for officers for the ensuing session as follows :—President, Mr. G. Sheridan, A.R.I.B.A. ; Vice-Presidents, Mr. J. Halloway, Mr. M. J. Tighe ; Committee, Messrs. Orpen, J. Pentland, R. M. Butler, T. E. Hudman, T. Coleman, L. O'Callaghan, C. H. Ashworth, F. Batchelor, Wm. Scott ; Hon. Treasurer, J. H. Webb ; Hon. Librarian, J. Geoghegan ; Hon. Secs., H. Allberry, F. Hicks ; Hon. Auditors, W. Sandall and J. W. Boucher. Mr. Pentland delivered a short valedictory address. The term of office of Mr. Butler, the Hon. Secretary, having expired, a vote of thanks to him was proposed by Mr. Allberry, and seconded by Mr. P. F. O'Sullivan, for the energy and attention with which he had directed the affairs of the Association since its inauguration in 1896. It is proposed that the Association visit Chester for their annual excursion and dinner on Friday, June 30. The following new members were admitted :—Messrs. G. G. Lynes, J. Baird, H. J. Lundy, J. M. Mitchell, Wm. Conolly.

EDINBURGH ARCHITECTURAL ASSOCIATION.—Members of this Association visited Arbroath on Saturday last on the occasion of their annual excursion. The President, Mr. James Bruce, W.S., the past president, Mr. Thomas Ross, and the secretary, accompanied by about thirty members, proceeded by train to Elliot Junction, and walked to Kelly Castle, now the country residence of Lord Provost M'Grady. The party proceed to examine the Castle, which is situated about two and a half miles from Arbroath on the River Elliot. The oldest portions, built about 1442 by Sir William Ochterlony, have been much added to and altered, and the building now is a picturesque and comfortable house of red stone, having a fine walled-in garden with yew hedges 4 ft. 6in. thick Luncheon was provided by Lord Provost M'Grady, and the President asked Mrs. M'Grady to be good enough to convey to him the thanks of the Association for permitting the visit, and for his hospitality. Under the leadership of Mr. T. S. Robertson, the party then visited Hospitalfield, the original of the Monk-barns of "The Antiquary." The parish church and the Abbey were next examined. The well-known abbey was founded in 1178, and the latest additions were added early in the fifteenth century. The Rev. W. Duke accompanied the members from the abbey to his church of St. Vigeans, built on the site of a Norman church, and restored twenty-seven years ago by Mr. R. Rowand Anderson, LL.D. Mrs. Duke provided refreshments, and after Dr. Duke and the hostess had been thanked the party returned to town.

CLOCK TOWER ON THE EASTGATE, CHESTER.—A clock tower has been erected on the Eastgate, in commemoration of the Diamond Jubilee, and on the 24th ult. the clock was started. The tower, which is of ornamental ironwork, was designed by Messrs. Douglas & Minshull, of Chester, the clock having been supplied by Messrs. Joyce & Co., of Whitchurch. The ironwork of the tower was executed by Mr. James Swindley, of Handbridge.

Illustrations.

MODEL FOR THE STATUE OF BALZAC.

WE give an illustration of the plaster model by M. Falguière for the proposed statue of Balzac, which occupied a prominent position among the sculpture in the Old Salon this year, as that of M. Rodin occupied a prominent position in the New Salon the previous year.

It may be remembered that the commission for a monumental statue to the author of the "Comédie Humaine" was in the first instance given by the "Société des Gens des Lettres" (the promoters of the monument) to M. Rodin, who, after keeping them waiting some years, produced only the rough and almost grotesque sketch which figured in the New Salon last year, and became a *casus belli* in the artistic world. There was indication, as we have always thought, of a fine and original conception underlying M. Rodin's sketch ; but the "Société" not unnaturally lost all faith in a sculptor who displayed such eccentricity of temper and aims, and took the commission out of his hands in favour of M. Falguière, a sculptor in whose saner genius and more rational temperament they could at all events feel confidence.

The result is, we think, a success, and is generally considered to be so in Paris, except by the adherents of "sculpture intellectuelle," which appears to mean unfinished sculpture. The model, which is the full size of the intended work, is colossal in scale, and represents Balzac in an attitude of deep thought, his hands clasped over one knee. The drapery is broadly treated, and there is a sculpuresque repose and dignity in the work.

As at present intended, the completed work will be erected in the Place du Palais Royal, an appropriate situation enough, since it was the centre of life of the Paris which Balzac analysed and satirised in his wonderful series of stories.

ST. SAVIOUR'S MISSION CHURCH, EALING.

THE illustrations show the interior view looking east and the exterior view from south-east of the above-named church, which is to be consecrated on Wednesday, June 14, by the Bishop of London. The interior view was exhibited in the Royal Academy in 1897. The main object of the design has been to get a lofty and effective building that would accommodate about 1,000 adults at a very reasonable cost, and to trust to the general massing and proportion rather than to detail for effect ; in fact, all elaborate ornament (except only in the case of the chancel arch and rood beam) is dispensed with, and moulded work is confined almost entirely to strings and labels.

The main form of the plan is a nave 113 ft. long by 40 ft. wide, divided into six bays of 18 ft. centres. Broad processional passages are placed on either side, and north and south transepts are thrown out from the two eastern-most bays, that on the south side terminating in an apsidal-ended chapel, and that on the north side in a lofty arch opening into organ chamber. An apsidal-ended baptistry is placed at the west end of the nave.

The chancel is 46 ft. long by 29 ft. wide, with an altar raised nine steps from the nave floor level. Wide passages for returning communicants are placed north and south of the chancel, and above them are formed the organ chamber on the north side, and musicians' gallery on the south side. Spacious clergy and choir vestries are placed on the north side, with heating chamber under. The nave walls are splayed in towards the jambs of the chancel arch, and upon this splay are placed twelve niches, with canopies over for figures of the twelve Apostles, and a stone screen, with wrought iron grille work above, divides the chancel from the nave. An elaborately carved oak rood beam is placed at the springing of the arch, upon which is placed the figure of the Crucified Saviour and attendant figures. A richly worked dossal carried to a height of 20 ft. above the altar, also curtains at the east wall, on either side, give dignity and warmth to the east end.

The roof is of barrel form, being carried at one level through nave and chancel, and gives ample scope for future decoration. At present the whole of the timber and boarding in the roof is stained green, with not unpleasing effect. The heating is by hot water, with radiators and pipes upon the low pressure system.

The church being hemmed in on all sides by dwellings of the poorer class, the external elevations have purposely been kept severely plain. A copper covered flêché, which is placed at the junction of chancel and nave roofs, is carried to a height of 46 ft. above roof, and is a conspicuous object at some considerable distance from the church.

The materials used internally are red brick and stone facings, and externally stock brick.

The church and all detail work has been carried out from the designs of Mr. Geo. H. Fellowes Prynne, of Westminster ; Messrs. Goddard & Sons, of Farnham, being the contractors.

The figures and carving work have been done by Messrs. Martyn & Son, of Cheltenham ; the dossal and altar hangings by Mr. A. Stalman, and the heating by Messrs. J. Jones & Sons.

The cost of the church, complete with fittings, will be about 11,000*l*.

EMPIRE PALACE OF VARIETIES, MIDDLESBROUGH.

THE site selected for this building covers an area of upwards of 11,000 square feet, having frontages on three sides to Corporation-road, Pine and Dunning-streets, and a frontage to a right-of-way in the rear ; being thus practically isolated. The main approach is from Corporation-road through a hall, 34 ft. by 19 ft., and 18 ft. in height, having a large recessed fireplace ; at the left-hand side upon entering is the box-office, adjoining which is the staircase to the stalls, whilst on the right is a broad staircase leading to the grand circle ; in addition there are two emergency exits from the stalls into Dunning and Pine-streets, and an emergency exit staircase from the grand circle into the former thoroughfare. The pit entrance is from and on a level with Dunning-street, with an emergency exit opposite directly into Pine-street, whilst the gallery entrance is from

Empire Palace, Middlesbrough.

the latter street, with an emergency exit into Dunning-street.

The auditorium is nearly square, being 60 ft. in width by 63 ft. deep, and the average height to the false ceiling is 45 ft. The area comprises 120 orchestra stalls, 120 stalls, and a pit with a seating accommodation of about 450. Spacious saloon accommodation is provided. The grand circle has seating accommodation for 150 persons, with ample lounges. Immediately in the rear over the entrance hall is the principal saloon, 34 ft. by 27 ft., approached by two short flights of steps, thus enabling a clear view of the stage to be obtained. A further saloon is also provided on the Dunning-street frontage. Both the entrance and exit staircases terminate in roomy lobbies, and there are communication staircases directly into the stalls from either side. Four private boxes

flank the proscenium, and on the gallery level are two private boxes. The gallery itself has seating accommodation for 750 persons, and a suitable saloon is provided in the rear.

The ceiling, proscenium, circle, and box-fronts are in specially designed and modelled plastic work, following in a degree the Spanish Renaissance treatment of the exterior. The ceiling is painted with allegorical subjects. The principal seats are of the tip-up pattern and upholstered in velvet, and the pit seats upholstered in leather. The stage and its accessories are roomy, and will permit of spectacular productions of all kinds. Its dimensions are as follows :—Width from wall to wall 70 ft., average depth 35 ft., height to flies 25 ft., height to grid 55 ft., proscenium opening 30 ft. square. Six dressing-rooms are provided, entirely distinct from the stage and in a separate block, each room being fitted up in the most approved manner. The stage entrance is from Dunning-street, and the scenery entrance in the rear of the building.

Messrs. Ernest Runtz & Co. are the architects.

A drawing of the building was exhibited in the Royal Academy in 1897.

COMPETITIONS.

HOSPITAL, SWINDON.—The Swindon and District Hospital Board have accepted the joint plans of Mr. G. Halliday, F.R.I.B.A., and Mr. J. W. Rodger, of Cardiff, for the building of a hospital at Swindon, and have sent instructions to the architects to prepare the necessary drawings to carry out the work.

WANDSWORTH BOARD OF GUARDIANS OFFICES.—The Guardians have examined the designs sent in (twenty-eight sets in all) with the assistance of Mr. A. Graham, the assessor, and it was agreed that the first premium of 100*l.* be awarded to No. 25, second of 60*l.* to No. 12, and third of 40*l.* to No. 20. The clerk was instructed to open the sealed envelopes containing the names of the premiated authors. No. 25 was by Mr. Cecil A. Sharp, A.R.I.B.A., of 59, Fenchurch-street; No. 12 by Mr. N. F. Harber, 35, Craven-street, Strand, W.C.; and No. 20 by Mr. W. Nash, F.R.I.B.A., Bush-lane House, Cannon-street, E.C. The architect's estimated cost of the work is 20,311*l.*

ARCHÆOLOGICAL SOCIETIES.

EAST RIDING ANTIQUARIAN SOCIETY.—The first summer meeting of the East Riding Antiquarian Society was held on the 31st ult. About thirty members took part in the excursion. The party left York railway station in waggonettes shortly after 11 o'clock, the route being Stillingfleet, Cawood, and Ryther. Upon arrival at Stillingfleet the party proceeded to the church, which was described by Mr. Hodgson Fowler, by whom the building was restored about twenty years ago. The style of architecture is Norman, and the most remarkable features are the porches and the doorway, which is of the original oak and fine wrought ironwork. Ryther church was also described by Mr. Fowler. This ancient edifice came into history as early as A.D. 869, when the Danes sent an expedition to clear away the forest and settle down there. In Edward the Confessor's time the owners of this land were Danes, and there was a church and a priest at that time. Perhaps the most noteworthy features of the church are the beautiful monuments of the Lords of Ryther. From Ryther the party proceeded to Cawood Castle, where the Rev. E. Maule Cole read descriptive notes by the Dean of York. They also visited the Old Manor House, which was built by Archbishop Gray and seized by Edward I., who lived there with his Queen. Cawood was restored to the Church in the time of Cardinal Wolsey, who was living there at the time of his arrest. During the Civil Wars the castle was so well defended that by order of the House of Commons it was demolished to prevent it causing any further trouble, and all that remains is an archway. The church at Cawood contains but one monument, and that was erected to the memory of Archbishop Mountain, a Cawood boy who raised himself to the position of Primate of the Northern Province. After the inspection of Cawood the return journey was begun, and the party reached York Station about five o'clock.—*Yorkshire Post.*

ENGINEERING SOCIETIES.

SOCIETY OF ENGINEERS.—At a meeting of the Society of Engineers, at the Royal United Service Institution, Whitehall, on the 5th inst., Mr. C. Fell, President, in the chair, a paper was read by Mr. R. G. Allanson-Winn, entitled "Fore-shore Protection, with Special Reference to the Case System of Groyning." In introducing the subject the author referred to the advantages of utilising the destructive forces of the sea for constructive purposes, and stated that his object was rather to give an account of what had actually been accomplished in that direction than to advance his own opinions or theories. Dealing with the question of changes constantly going on in the configuration of the country, he took as an example thirty miles of the Yorkshire coast, and calculated that, at a moderate computation, over 47,500,000 cubic ft. of material were annually taken from the coast beween Flamborough Head and Spurn Point. Where did it all go to? Much was doubtless deposited at the mouth of the Humber, greatly to the detriment of that estuary, and probably more was carried down southward by the flood tide and deposited, along with material eroded from the Lincolnshire coast, in the Wash, which was gradually silting up. The erosion, in the shape of falling cliffs, was noticed now and taken account of; what did not so readily meet the eye was the gradual deposit beneath the sea, and this accretion of silt would suddenly show itself some time next century when, possibly, 100,000 acres of land in the Wash would suddenly, by comparison, spring into existence and be added almost at once to the acreage of England. Taking one century with another we did not probably gain or lose much of our area. The addition of 100,000 acres in the Wash alone would make up for a good many years of cliff erosion. Having briefly quoted certain conflicting opinions on the moot point of the travel of beach at various depths, the author endeavoured to show that, as Dungeness Point was steadily moving out into 100 ft. of water, there was strong evidence that shingle, of which the point is entirely composed, is capable of motion in water at least 100 ft. in depth. Allusion was then made to the unprecedented encroachment of the sea during the past year at Glenbeigh, on the southern shore of Dingle Bay, co. Kerry, an average of 120 ft. being recorded for a distance of over 2,000 ft. The problem here involved the protection of about 600 acres of land and some house property. The situation was one of exceeding gravity, and it had been decided to put in the groynes invented by Mr. Edward Case, of Dymchurch, because this system of low groyning had been so successful at other places where the natural difficulties were greater. Having alluded to the usually accepted methods of dealing with the question of foreshore protection, Mr. Winn pointed out that these oft-repeated and usually accepted methods had frequently met with but indifferent success, and that until Mr. Case brought out his system no one had ever promulgated a scientific theory as to the curve at which a shore should lie, or devised a simple and inexpensive form of groyne which should cause the sea itself to build up that shore to its required curve surface of repose. Mr. Case was able, by means of tables which he had constructed and the due consideration of certain details, such as range of tide, nature of shore, sections, &c., to build up any shore, save only an actually rock-bound coast, to an angle at which it would lie with the minimum chance of erosion or alteration of form. The paper was illustrated by diagrams showing, by means of sections, the actual gains at Dymchurch, Deal, Southwold, Lowestoft, and Sheringham—which places were selected from a great many where the system had been successfully applied. The author contended that the invention was to be recommended by reason of its theoretical soundness, its practical utility and economy, and by its success.

WESLEYAN CHURCH, GOSPEL OAK.—The memorial stones have just been laid of the New Wesleyan Church, now in course of erection on a site at the corner of Agincourt-road and Lisburne-road, Gospel Oak. The new church, the architect of which is Mr. Beresford Pite, is octagon shaped, and is of red brick with stone dressings. The main frontage will be to Agincourt-road. It will provide seating accommodation for 800 worshippers. In addition to the main building, a church parlour and minister's vestry will be provided.

METROPOLITAN ASYLUMS BOARD.

THE fortnightly meeting of the Managers of the Metropolitan Asylums District was held on Saturday at the County Hall, Spring-gardens, Sir Edwin H. Galsworthy, the Chairman, presiding.

The Projected Southern Hospital.—A letter was read from the Local Government Board suggesting, in view of the probable heavy cost of the Southern Hospital as at present designed, a conference between representatives of the Managers, their architect, and the Board's officers. The letter was referred to the Works Committee, and it was resolved to send on to the Local Government Board the drawings of the foundations of the proposed hospital, prepared by Messrs. Treadwell & Martin, architects, together with the architects' approximate estimate of the cost of the proposed hospital buildings. The hospital is designed for 720 ordinary and eighty infirmary beds, and the approximate estimate amounts to 227,454*l.* The following works will form the subject of a supplementary estimate :—Boiler-house, and destructor and works in connexion therewith, engineering works, heating, hot-water supply, and electric or gas lighting, making up roads and paths, laying out grounds, &c., water supply so far as it relates to the well, water-tower or water-softening apparatus, laundry and kitchen engineering fittings and apparatus.

A Hackney Improvement.—A letter from the Vestry of Hackney asking for a contribution towards the 5,000*l.* needed to widen College-lane, Homerton, was referred to the Committee. The widening would facilitate the ambulance service of the Managers.

The Proposed Theatre at Hampstead.—It was resolved to protest against the proposed erection of a theatre on a site adjoining the North Western Hospital at Hampstead.

The Paris Exhibition.—It was agreed to spend 400*l.* on models of the North-Eastern Hospital and the Brook Hospital for the forthcoming Paris Exhibition.

New Ophthalmic School.—The Managers agreed to send on to the Local Government Board for approval the finished plans prepared by Messrs. C. & W. Henman, architects, for the erection of the proposed High Wood School at Brentwood for the accommodation of ophthalmia children. The approximate estimate of the cost of the buildings was reported to be 106,600*l.*

Hospital Laundries.—The Works Committee reported that, in the light of recent experience and advice, they had come to the conclusion that the proposed laundry buildings for the North-Eastern Hospital would admit of considerable modification and simplification, which would not only decrease the cost, but also admit of the laundry being more economically administered and more efficiently supervised. Messrs. A. & C. Harston, the architects, had accordingly prepared amended plans of the proposed permanent laundry, the total cost of which they estimated at 13,455*l.*, as against 14,450*l.*, which was the estimated cost of the plans previously approved by the Managers. The Committee also proposed a similar change in the plans of the new Joyse Green Hospital laundry, which were approved nearly two years ago. The specifications for the remaining portions of this hospital being now in the hands of the quantity surveyor, the Committee were anxious that the varied plans for the laundry should be at once approved, so that no further delay should take place in inviting tenders for the erection of the hospital.—The Managers assented to the change at Joyse Green, but postponed the consideration of the new plans for the laundry at the North-Eastern Hospital.

Appointment of a Surveyor.—The Works Committee recommended that Mr. Charles Edward Dance should be appointed Surveyor to the Board, at a salary of 500*l.*, with travelling expenses, office accommodation, and all necessary assistance. Mr. Dance has for ten years been building surveyor to the Great Northern Railway Company. Mr. Dance was articled to Mr. Goymour Cuthbert, A.R.I.B.A., and subsequently acted as assistant surveyor of works to Messrs. Peto Bros. Several members raised the question whether an architect instead of a surveyor should not be appointed, but the Chairman pointed out that this question had been settled at a previous meeting, and the appointment was sanctioned.

St. Anne's Home, Herne Bay.—It was resolved

to erect an isolation block at this institution, but the details of size and construction were left to the Children's Committee for further consideration.

Homes of "Remand" Children. — It was agreed to purchase, for the purpose of one of the institutions to be created for children remanded by the magistrates, the three houses in Pentonville-road, with workshops, formerly occupied by Dr. Stainer as a home for deaf and dumb children. It was reported that the whole property is in a very dilapidated condition, and would need extensive repairs.

LONDON BUILDING ACT, 1894.

TRIBUNAL OF APPEAL AND THE DIAGONAL LINE.

THE Tribunal of Appeal under the London Building Act, 1894, sat at the Surveyors' Institution, Great George-street, Westminster, on Friday, the 2nd inst., the members present being Messrs. Arthur Cates (Chairman), A. A. Hudson, and J. W. Penfold. The appeal before the Tribunal was that in which Messrs. Hunters & Haynes, on behalf of Mr. Alfred Charles Stock, sought to overrule the decision of the London County Council, which body had declined to sanction the extension above the diagonal line mentioned in Section 41 of a portion of a building — the "Globe" public-house, Marylebone-road—which it is proposed to rebuild. On the further amended plans prepared by Mr. W. A. Scrymgour, an open space was shown at the rear of the building, but the County Council determined not to sanction these "as the Council is not satisfied that there will be provided at the rear of the proposed building such an open cubic space of air as will in case of such extension be required by the last proviso in Section 41 of the Act and it appears, moreover, that the open space proposed to be provided in the rear of such building is not such as to comply with the said Section 41."

Mr. R. D. B. Acland, barrister, appeared for the appellant, and Mr. Seager Berry on behalf of the London County Council.

From the statement of the learned counsel for the appellant it appeared that it was proposed that the public-house in question should be rebuilt on the site of the present building, 47, Marylebone-road, with the addition of 43 and 45, Marylebone-road and 21, York-place. The "Globe," in its new form, would assume the proportions of an hotel, forming the sides of a square block of buildings, facing on one side on York-place and on the other on Marylebone-road. It was proposed that the front should face on York-place. The site in question was at the north-west corner of a block of buildings and the portion of the site which the Council had refused to sanction was on the north side, and would, therefore, not materially affect the access of light or air to the space at the rear of the block. The surrounding buildings consisted of Portman Mansions, which were erected by Mr. W. A. Scrymgour, the architect who had prepared the plans for the rebuilding of the "Globe" Hotel. Portman Mansions were held on a long lease, the term being co-terminous with the lease of the site on which Mr. Stock proposed to rebuild his hotel. There was no probability of any alteration being made to the Portman Mansions. It was proposed that a portion of the new building should extend above the diagonal line referred to in Section 41 of the Act, and by the last proviso of that section the County Council or the Tribunal of Appeal must, under the circumstances, be satisfied "that an open cubic space of air will be provided at the rear of such building, equivalent to the open cubic space which would have been provided at the rear of such building if such diagonal line had been drawn from the ground level in the manner provided in Sub-section 1 (iii.) of this section, and if no part of such building had extended above such diagonal line." According to the proposed plan a greater amount of cubic air space would, urged Mr. Acland, be allowed at the rear of the proposed building than would be provided if no portion of the building were raised beyond the diagonal line, in which case it would not have been necessary to have applied to the County Council at all to obtain their sanction to the plan. This would be realised from these figures. If the building were in an entirely new street, the total cubic space to be provided would be at the outside 103,417, but in view of the fact that by Sub-Section 2, Section 41, it was provided that in the case of a new building erected in an old street the horizontal line from which the diagonal line was drawn should be drawn throughout at a level of 16 ft. above the level of the adjoining pavement, the total amount of cubic space to be provided was 71,492 cubic feet. As a matter of fact, in the plans submitted by the appellant the total cubic space provided was 104,420 cubic feet. Counsel submitted, therefore, that the open cubic space of air would be provided at the rear of the building equivalent to the open cubic space which would have been provided if the diagonal line had been drawn from the ground level in the manner provided by Sub-section 1 (iii.) of Section 41, and if no part of such building had extended above such diagonal line. On these grounds counsel submitted that the appellant was entitled to erect the building as proposed.

Mr. W. H. Scrymgour, architect, gave evidence in support of counsel's statement, and entered into an exhaustive calculation as to how the 104,420 cubic feet of space was arrived at.

Mr. Seager Berry contended that these conclusions were not accurate. The Council refused their sanction because of the unsatisfactory totals arrived at after calculations had been carefully made.

In the result, the Chairman said the Tribunal had decided to allow the appeal. They came to this decision entirely on the merits of the case, and did not intend it to be regarded in any way as fixing a principle. Quite conceivably there might be cases in which it would be desirable to take into account the space below the diagonal line. No order was made as to costs.

Correspondence.

To the Editor of THE BUILDER.

REMAINS OF CONVENTUAL BUILDINGS, BRISTOL.

SIR,—Having been born under the shadow of Bristol Cathedral, some memoranda of my recollections may be of interest to your readers as illustrating Mr. Paul's sketches. You are, perhaps, aware that what is now called the Lower Green was evidently formerly the Abbey farmyard; and the Norman doorway, so well drawn by Mr. Paul, led from the farmyard direct to the Abbot's house, burnt at the riots, and now called the Bishop's Palace. This passage crossed the small cloister of which there are no remains; but the site is well marked, and above it I found, in a room over the cloister, clear marks of the divisions of the cubicles, which proved it to have been the infirmary, having access, most probably, to the small cloister by a staircase, and placed upon one pair so as to avoid the damp and fogs of the marsh. I also discovered, in rebuilding Canon Norris's house, what was then supposed to be a subterranean passage, but was evidently the main sewer of the Abbey, running to the river from the kitchens and other monastic buildings. But by far the most interesting remains were in what we used to call Canon Bank's house, situated to the south-west corner of the Abbey area and pulled down by Dean Elliot, who was a very clever, practical man, as he remarked it would then tell no tales. In this house, I have always heard, were remains of the piers at the west end of the nave and other interesting work. The house stood upon the site of the Prior's lodgings and the "Sala Regia" where distinguished visitors were lodged, and contained, I am informed, many interesting remains of the monastery—among others, the western piers of the nave.

Mr. E. Godwin made some drawings of it, but where they now are I cannot say. Nearly everything has now been removed to make a new road to the Docks, which has certainly the merit of throwing open the view of the south side of the Cathedral. A room with a fine early chimney-piece occupies the space over the Newton Chapel, and is called the Pigeon-house.

T. S. POPE.

WANDSWORTH OFFICES COMPETITION.

SIR,—After certain correspondence with the Clerk to the Guardians, with reference to an advertisement in your journal, we were eventually informed that a professional assessor would be appointed to adjudicate upon the designs submitted by competing architects, and in consequence of this we delivered a design on the date specified.

We have now had our entrance-fee of two guineas returned to us with an intimation that our drawings will be returned to us on application, but without any mention whatever being made of the assessors' name nor of those to whom premiums have been awarded, and no public exhibition of the designs appears to have been held in order to afford an opportunity to the competing architects and those interested of inspecting the designs submitted.

Under these circumstances it would almost appear doubtful whether an assessor has had the control of the competition, as surely he would have considered it his duty to have so advised the Board that his professional brethren would have been treated with more consideration.

CLARK & HUTCHINSON.

BOOKS RECEIVED.

THE LIFE OF WILLIAM MORRIS. By J. W. Mackail. (Longmans, Green, & Co.)

RIPON CATHEDRAL. By the Ven. W. Danks, M.A. (Isbister & Co.)

LICHFIELD CATHEDRAL. By the Rev. Canon Bodington. (Isbister & Co.)

THE BUILDER'S "WHERE IS IT": a comprehensive Index of Specialities in the Building Trade. (Geo. M. Callender & Co.)

The Student's Column.

ARCHITECTURAL HYGIENE.

XXI.—LIGHTING.

THE beneficial effect of sunlight upon the health of the human being is a matter of general knowledge, and it is recorded that the Romans of old used to indulge in *Solaria*, or baths of sunlight.

Modern medical authorities insist so strongly upon this necessity of sufficient light for the healthy condition of the human body that it behoves us to bestow more care upon this important subject than is usually given to it. Lighting may be conveniently considered under the following heads:—

1. *Solar light.*
2. *Assisted natural lighting.*
3. *Artificial lighting.*

I. SOLAR LIGHT.

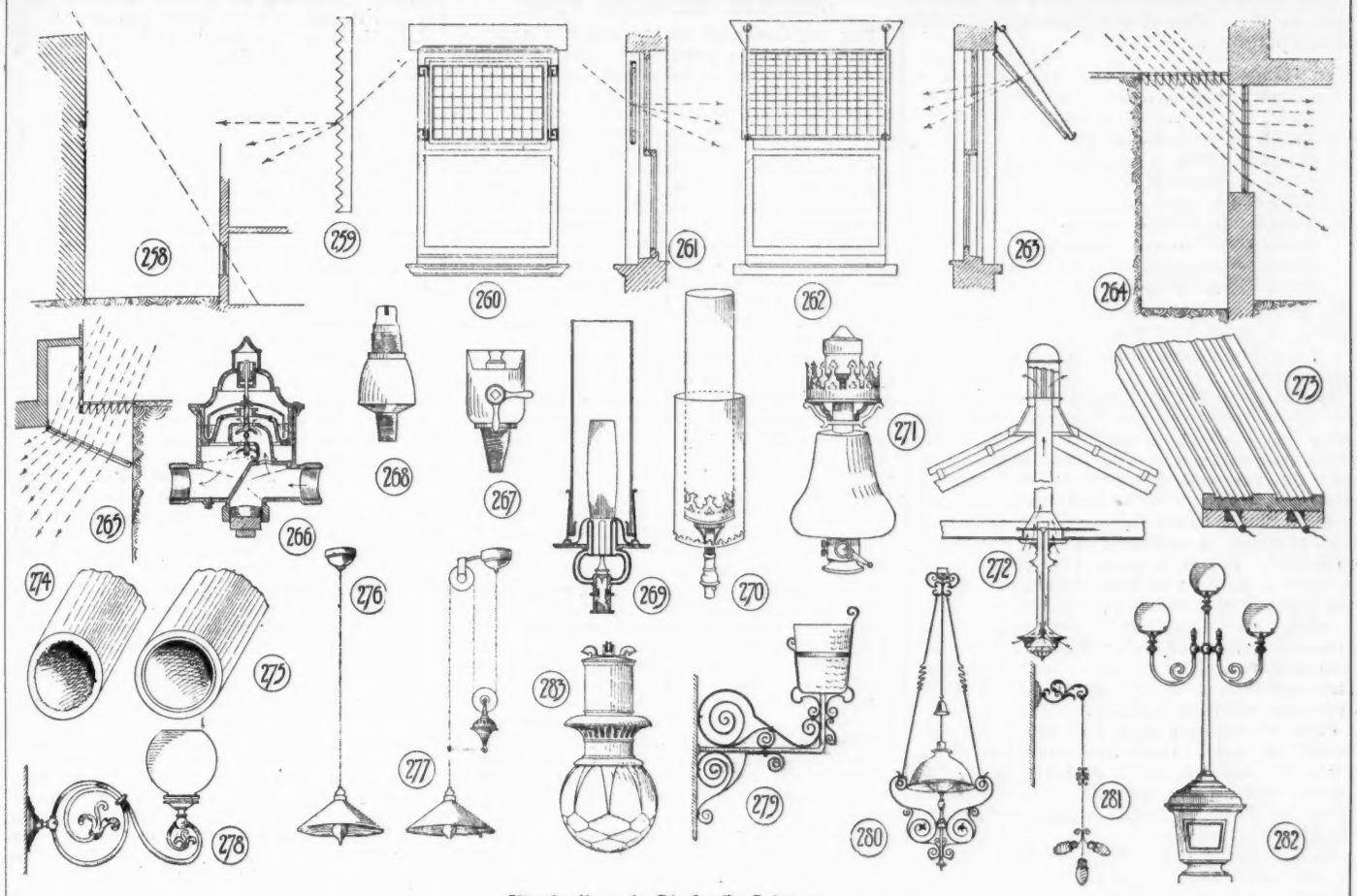
This was discovered by Newton to be a mixture, the whiteness of which is due to the proportions of its ingredients. By means of a prism of glass he threw a luminous band of light upon a screen, and this band was found to contain the following colours:—Red, green, violet, orange, yellow, blue, and indigo. The first three are the *primary* colours, and the others are an admixture caused by the overlapping of the adjacent bands in the prismatic spectrum. When an object is called a particular colour we mean that it gives free passage or reflection (as the case may be) to that particular colour or mixture of colours, and that it arrests or absorbs the remaining colours. Certain combinations and contrasts of colours are pleasing to the eye, and, according to Professor Barff, these are only existent when their combination, taken collectively, make up white light. When two or more colours of the spectrum by being blended together produce white light, such colours are said to be *complementary* of each other.

Under this heading of solar light we will now consider:—

(*a*) *The question of the admission of solar light to buildings.*
(*b*) *Relative proportions of windows.*
(*c*) *Positions of windows.*
(*d*) *Glazing.*

(*a*) *The Question of the Admission of Solar Light to Buildings.*—We learn from the ancients that light has a greater illuminating value when admitted through a horizontal aperture in the ceiling, and no greater proof of this can be found than in the Pantheon at Rome. The diameter of the eye of this dome is only 27 ft., and yet one must admit that this building is comfortably and sufficiently lighted, though each superficial foot of lighting area has to suffice for nearly 3,400 cubic feet of the contents of this structure. However, it is not often given to the architect to top light many of his buildings, and we will not pursue this subject further. With regard to vertical apertures in walls, it is found that an odd number of windows in an apartment is advantageous, as it obviates a central pier, which latter is apt to give a gloomy effect. In a long and narrow room more effect is obtained by lighting from the ends than from the sides; as if lighted by windows in the longer walls so very many more shadows would be cast. This is well exemplified in the ball-room at Windsor Castle, which is 90 ft. by 34 ft., and is 33 ft. high. It is illuminated by a northern window at one of the narrower sides, occupying nearly the whole width of the wall.

(*b*) *Relative Proportions of Windows.*—The question of climate must necessarily affect our calculations, and the laws laid down by Vitruvius, Palladio, and Scamozzi can scarcely be applicable to climates more distant from the equator, and influenced by local considerations. It being an axiom that smaller and fewer windows are required in a warmer climate. Sir William Chambers recommended adding the depth and height of the rooms on the principal floors together, and taking one-eighth part thereof for the width of the window. Robert Morris recommended that the superficial area of the lighting surface should equal the square root of the cubical contents of the room in feet. Gwilt was of opinion that 1 ft. superficial of light in a vertical wall will in a square room be sufficient for 100 cube feet if placed centrally in such room. This is based on the supposition that the building is free from obstruction by high objects in the neighbourhood. The



Illustrations to Student's Column.

model by-laws of the Local Government Board state that the area of the windows in a room should be at least equal to one-tenth of the floor area of such room; and this provision is also incorporated in the London Buildings Act of 1894.

(*c*) *Positions of Windows.*—One of the regulations of the Educational Department is to the effect that school-desks should be lighted from the left-hand side. This is undoubtedly a wise precaution, for if the light be behind the student, the body will cast its shadow upon the work being done. If the light be on the right hand, the work will be in the shadow of that hand. And if the light be directly in front, the reflected light from the surface of the table is directed into the eyes of the worker, and consequently puts an increased strain upon them. Moreover, on raising the eyes, they are subjected to a greater illumination, which stimulates the effort of vision instead of resting the eyes when not at work, as is recommended by oculists.

It is obvious that no fixed rules can be laid down as to the positions of various rooms in relation to the points of the compass, as so much depends upon the various characteristics of the site and local considerations. However, it is well to remember that rooms which are constantly inhabited in the daytime should, wherever possible, have as much actual sunlight as can be obtained through skilful planning.

(*d*) *Glazing.*—Plate glass, though disagreeable in effect, has the practical advantage that it affords less resistance to the admission of light, and being of greater thickness it does not dissipate the heat of the room so quickly as sheet glass. Moreover, it is not so easily penetrated by sounds. Cathedral tinted glass may be used in some situations, and it is claimed that it increases illumination owing to its texture. According to Sir David Brewster, all glass with a roughened or fluted surface increases the amount of light that penetrates any window, but it should always be remembered that such surfaces are prone to harbour dust and dirt.

The following table shows the result of some recent experiments :—

Nature of Glass.	Percentage of Light Intercepted.
Polished British plate ¼-in. thick	13
16 oz. sheet glass	22
Cast plate ¼-in. thick	30
Rolled plate, four corrugations to 1 in..	53

2. ASSISTED NATURAL LIGHTING.

This is found necessary in rooms facing narrow thoroughfares and areas facing adjacent high buildings, and in basements and other places where the solar rays have but limited access. The covering of the obstructive walls with white glazed tiles or facing the same with white glazed bricks, does something to assist the reflection of light into such rooms. And the painting of the walls of the rooms in light colours, or even lining them with white tiles is found to be beneficial. It is also found that by keeping the window frame flush with the external face of the wall, more light is admitted into the room.

External Reflectors are sometimes placed outside windows for the purpose of reflecting light into the building. In America and Canada within the last few years the high buildings which have been erected have necessitated the adoption of some means of refracting the light to the lower windows, so as to carry the illumination to the back of the rooms. This has been effected to a larger extent by *Luxfer prisms* which have now been introduced to this country. They are designed upon the following principles :—

The direct natural light to an apartment coming from the sky is, to a large extent, absorbed by the floor, as shown in fig. 258 although even ordinary glass has some refractive influence upon light and thus bends some light into the room. This law of refraction has been utilised in the *Luxfer prisms*, and the latter are so constructed and arranged to suit the varied cases that may arise. Fig. 259 illustrates this principle. In upper floors these prisms are usually fixed in the upper half of the windows and nearly flush with the outer surface of the wall as shown in figs. 260 and 261. In the cases of very lofty buildings the lower windows have canopies as shown in figs. 262 and 263, so as to receive more light from the sky. Basements are lighted by pavement lenses which throw the light down on to a canopy fixed vertically which, in its turns, refracts the light in a horizontal direction to the rear of the apartment as shown in fig. 264. Where the pavement light is narrow and a high stall board is permissible, a sub-canopy may be used as shown in fig. 265.

3. ARTIFICIAL LIGHTING.

This is caused by the heating of some substance till it becomes incandescent. Until electricity had been used in recent years for lighting this condition was solely obtained by using the heat developed during chemical change, but since the impeding of the conduction of an electric current was found to produce incandescence, this method of illumination has steadily increased. Owing, however, to the great gas monopolies and the conservative tendencies of the inhabitants of Great Britain, the progress has been much slower than in other countries. On the American continent electricity plays a far more important part in public and private enterprise.

We may consider this subject of artificial lighting under the following headings :—

(*a*) *Candles and Lamps.*
(*b*) *Gas.*
(*c*) *The Electric Light.*

(*a*) *Candles and Lamps.*—For private dwellings there can be no question that illumination from candles and lamps is popular with certain people. Light for light, however, they are less healthy than gas; there is also more danger of a conflagration ensuing through their use unless great care is exercised. The low-flash oils, which are permitted to be sold to the poorer classes, so often occasion fires and loss of life, that some measures must surely soon be taken to modify this evil. The cheaper forms of lamps also are so dangerous that the wonder is that more accidents do not occur. It is estimated that two sperm candles or one good lamp render the air about as impure as one individual.

(*b*) *Gas*, as distilled from coal, was used by Mr. Murdoch, of Redruth, to light his own house at the end of the eighteenth century; but it was so impure as to render flues necessary to carry away the noxious odours. The lime process of purification, however, alleviated this nuisance, and allowed the use of naked flames. One gas burner will consume as much oxygen and give out as much carbonic acid as six men.

Illumination.—The standard method of measuring the power of illumination by gas is a spermaceti candle, burning 120 grains per hour; the consumption of the gas being reduced to 5 cubic feet per hour. The gas in the metropolis should, by statute, be of the illuminating power of sixteen candles. The specific gravity of gas (assuming air as the unit) is, for ordinary calculations, assumed as 45.

The following table is published by Messrs. Stott as their idea of the light required for various purposes.

	Candle-power per 1,000 sq. ft. of area.
Country roads	½
Small towns	4
Large towns	10
Hospital wards, Barracks and drill-sheds	50 to 100
Cottage parlours	150
Villa dining-rooms	250
Board schools	300
Churches and chapels	300
Banqueting halls, &c.	450

The above approximate calculations must, of course, be subject to the reflecting powers of the decorations and colours used in the various apartments.

Impurities in gas are limited more or less by the Act of 1868; the following are the usual tests. For ammonia redden yellow litmus paper with dilute acid and place it in a gas-jet; the presence of ammonia will turn it brown or restore more or less completely the original blue. Under the above Act not more than 2½ grains of ammonia are allowed to 100 cubic feet. For carbonic acid pass a jet of gas through a solution of lime and water which has been allowed to settle; the acid will cause a white discolouration. No sulphuretted hydrogen is allowed under the Act. The test is to prepare a piece of paper with acetate of lead and to put it into a jet; sulphuretted hydrogen will turn it brown.

Pipes of wrought iron, with screwed joints should be used. Lead and composite pipes, are to be avoided, owing to their liability to injury, and to the fact that nails are often found to have pierced them during the finishing of a building.

Messrs. Stott publish the following formula to ascertain the sizes of pipes required, the specific gravity of London gas being assumed to be constant, and the pressure being taken at $\frac{7}{10}$ in. :—

$$N = \frac{200\ D^2 \times \sqrt[4]{D}}{\sqrt{2 \times L}}$$

Where N = the number of lights, each consuming 6 cubic feet per hour.
D = the internal diameter of the pipe in inches.
L = the length of pipe in yards.

Molesworth gives the following table of the inside diameter in inches of service pipes :—

No. of lights burning 5 c. ft. per hour.	Distance from main in feet.						
	25	50	75	100	150	200	300
5							
10							
25	—						
50	—	—		1	1	1¼	1½
100	—	—	1¼	1½	1¾	1¾	1¾

It is convenient to have a small draw off pipe at the lowest point of the service, so that the water absorbed by the gas in the reservoir (where it is stored over water) and deposited in the pipes may be drawn off. Gas readily absorbs water and deposits the same when at a lower temperature, and where water meters are used the deposit of this water in the pipes is a great nuisance, as it produces a flicker in the lighted gas which renders it impossible for convenient use.

OBITUARY.

MR. W. L. HENDERSON.—The death has occurred at Bridge of Allan of Mr. William Low Henderson, head of the firm of Messrs. W. Henderson & Son, architects and valuators, Aberdeen. Mr. Henderson, who was seventy years of age, was a graduate of Marischal College, and had been in business for many years.

CHURCH, YARMOUTH.—On the 31st ult. the opening and dedicatory services took place in respect to St. Luke's Church, Cobholm, erected on a plot of ground adjoining the Church Mission Room. St. Luke's Church stands on a corner site in the principal thoroughfare at Cobholm, and has been built from plans prepared by Mr. Sidney Rivett, architect, South Quay. The following were the various contractors, viz. :—Mr. A. E. Bond, brickwork and masonry; Mr. A. J. Willimont, carpentry, &c.; Mr. W. T. Spencer, plumbing and painting; coloured glazing, Mr. W. R. Weyer, of Norwich.

GENERAL BUILDING NEWS.

THE RESTORATION OF MALMESBURY ABBEY.—At a meeting of the Malmesbury Abbey Restoration Committee, held in the Town Hall, Chippenham, on the 24th ult., Mr. Harold Brakspear, the architect, produced and explained the plans of the work to put the parish church in a state of repair, the cost of which, at a previous meeting, was estimated at about 10,000*l.* On the motion of the Rev. G. Windsor Tucker, seconded by Sir R. H. Pollen, the plans and specifications were unanimously adopted. Lord E. Fitzmaurice proposed that a limited number of builders be invited to compete. This was seconded by the Archdeacon of Bristol, and carried. Certain names were suggested, and it was generally agreed that the chairman should take advice as to one or two further names, and that invitations should be sent out accordingly.

LLANGATHEN CHURCH, CARMARTHENSHIRE.—It has been resolved to carry out certain works of restoration to this church, which dates from the fifteenth century. The present chancel arch, chancel roof, east window, and the arcade between the chancel and the Aberglasney Chapel, which evidently suffered in Puritan times (both Cromwellian and Victorian), and which have now lost all Gothic semblance, will be replaced with something more appropriate. The Cadvan Chapel, on the north side of the nave, will also be dealt with. At present the internal walls of the church are plastered (probably "Puritan"), and it will be interesting to know what work the plaster may conceal, as a small piscina, with a four-centred head, a Gothic recessed tomb (apparently) both at the east end of the south aisle, and an imposing Renaissance tomb to a Bishop in the Aberglasney Chapel, seem to show that the church was one of considerable importance. The architect—Mr. R. Wellings Thomas, of Llandrindod Wells—has decided to use the same quarry stone in the new work as the ancient dressings are executed in, viz., a red coarse sandstone from Llandebie. Stained glass has already been promised for the new east window.

HEXHAM ABBEY RESTORATION.—We understand that the joint report of Mr. C. C. Hodges, as architect, and Mr. Temple Moore, as consulting architect, on the above has been adopted by the committee, and the work is to go on. The scheme is a large and important one, and comprises the building of the nave and putting back in their old places, as far as possible, all the old furniture of the choir and the detached chantries, and, to a large extent, undoing the mischief that was perpetrated in 1858-60.

SEAMEN'S CHURCH AND INSTITUTE, YARMOUTH.—The foundation stone was laid recently on the South Quay of the new church and institute to be there erected for the use of seamen and fishermen. The present buildings will be completely cleared away, and the site will be about 90 ft. by 28 ft. On the ground floor there will be a Seamen's Institute 68 ft. by 28 ft. and 12 ft. 6 in. high, with a store-room 16 ft. by 13 ft. On the first floor will be a mission church 68 ft. by 28 ft., and 22 ft. to the apex of the roof, the vestry being 16 ft. by 13 ft. The main entrance to the Institute will be from the Quay, with outer and inner swing doors. The floor will be of pitch-pine wood blocks laid on concrete, the walls having a wood dado. The church will have a broad staircase of pitch-pine leading from an entrance lobby in Row 143. There will also be an iron staircase from the vestry leading down into the open space left to the east. The ground floor walling will be of red brick, and the upper floor will be of half timber filled in with brick nogging. The architects are Messrs. Bottle & Olley. The builder whose tender has been accepted is Mr. W. Cork, and the plumber is Mr. R. A. Eastoe.

CHANCEL, PARISH CHURCH, AGHALEE, BELFAST.—On the 27th ult. the new chancel of this church was consecrated. The architect was Mr. J. H. Fullerton, of Belfast, and the contractor was Mr. Forsythe.

U. P. CHURCH, GARDENTOWN, ABERDEEN.—A new church for the Gardentown U. P. congregation has just been opened. Mr. R. G. Wilson, Aberdeen, was the architect.

NEW MISSION HALLS, WESTBOURNE FREE CHURCH, GLASGOW.—The memorial-stone of the mission-halls in Ruchill-street, Maryhill, was laid recently. It is intended that comparatively soon a church to accommodate about 800 persons shall be erected on the same site, and that the mission premises shall be handed over to the new church. The halls will occupy a frontage to Ruchill-street of 42 ft., and provide on the ground floor a hall measuring 47 ft. by 40 ft., with a lesser hall 16 ft. 6 in. by 22 ft., and a small room 8 ft. by 13 ft. 6 in. On the upper floor there will be a hall 16 ft. 6 in. by 45 ft., divided with a folding partition, a library, and a sewing-room. At the back of the premises a house of three rooms and kitchen will be provided for the beadle. The architects are Messrs. John Honeyman & Keppie.

CHURCH AND SCHOOLS, NORTHAMPTON.—On the 1st inst. was dedicated the temporary iron building which has been erected in Edinburgh-road, Queen's Park, and which is eventually to be replaced by Holy Trinity Church. The church comprises a nave and chancel. The elementary school provides, in the mixed school, for 120 places and in the infants' room eighty places. There are also boys' cloak-rooms, girls and infants' cloak-rooms, and outdoor offices. The church and schools have been erected by Mr. H. Green, from plans prepared by Mr. M. H. Holding. The plumbing, glazing, gas fitting, &c., was done by Mr. H. M. Goy, of Northampton.

WESLEYAN CHURCH, WEST STANLEY, DURHAM.—The new Wesleyan Church and Sunday Schools at West Stanley, which have been erected at a cost of over 4,800*l.*, were opened on the 31st. ult. The church has been designed by Messrs. Green & Brockbank, architects, Liverpool, the building contractor being Mr. Alfred Routledge, West Stanley, while Mr. Thomas Mordue, Dipton, executed the joinery work. The church seats 1,000 persons, and schoolrooms, vestries, &c., are arranged underneath.

CHURCH OF ST. SIMON, PADDINGTON.—On the 30th ult. the Bishop of London consecrated the new church of St. Simon, Saltram-crescent, Paddington, a district formed out of the parishes of St. Jude's, Kensal Green, and St. John's, Kilburn. The new church, of which the chancel yet remains to be erected, is a building of red brick with Bath stone dressings, and has been constructed by Messrs. Bentley & Sons, from the plans of Mr. J. S. Alder. The cost so far incurred has been 4,500*l.*

CHURCH RENOVATION, KINGSTON-ON-THAMES.—The Eden-street Congregational church was re-opened on the 28th ult., after renovation. The ceiling and walls have been decorated, the whole of the woodwork has been stained and varnished, and choir stalls, with fifty seats, have been provided on the right hand side of the pulpit. The church is now lighted throughout by electricity. The work has been carried out by Mr. Whitmarsh (G. F. Havell, Eden-street), under the superintendence of Messrs. Carter & Ashworth, architects. Messrs. Prestwich & Burt carried out the electric lighting installation. The cost has been about 700*l.*

CHURCH RESTORATION, EAST STOCKWITH, LINCOLNSHIRE.—The church of St. Peter's, East Stockwith, has just been reopened after renovation. With a view to celebrating the jubilee of the church in 1896 the churchwardens instructed Mr. H. G. Gamble, architect, of Lincoln, to prepare plans for the erection of two new vestries, and for the general renovation of the interior of the building. The work has been executed by Mr. Moody, of West Stockwith, and Mr. C. Slingsby, of East Stockwith.

CATHOLIC SCHOOLS, STOCKTON. — Plans have been prepared by Mr. Arthur Harrison, architect, Stockton, and approved of by the Education Department for new Catholic infants' school. The school will provide seating accommodation for 320 scholars. The contract has been let to Messrs. Johnson & Hanby, contractors, Stockton, the total cost of the schools being estimated at 3,000*l.*

ADDITIONS TO KING EDWARD'S GRAMMAR SCHOOL, STOURBRIDGE.—Additions to this school have just been carried out by Mr. W. North from plans prepared by Mr. T. Grazebrook. The new buildings include a porch and corridor, a physical laboratory, a lecture room, a chemical laboratory, and an additional class-room; and the total outlay amounts to some 2,000*l.*

POLICE-COURT, POCKLINGTON.—A new police-court, in George-street, was opened on the 3rd inst. The building contains court-room, witnesses' retiring-room, retiring-room for the magistrates, charge-room, &c. Three cells are on the south side of the court. The principal elevation is executed with moulded red bricks and Howley Park stone. The building was designed by Mr. Alfred Beaumont, and the builder was Mr. T. S. Ullathorne, of Selby.

MASONIC HALL FOR LURGAN, NEAR BELFAST.—At a meeting of the members of the three Lurgan Masonic lodges recently, it was agreed that the recommendation of the Building Committee to appoint Mr. Thomas M'Millen, Belfast, contractor for the erection of the new Masonic Hall on the site recently secured from the Lurgan Real Property Company in Windsor-avenue be adopted. The contract price is 1,286*l.* odd. The edifice has been designed by Mr. Godfrey W. Ferguson, Belfast.

HOTEL, NOTTINGHAM.—A new hotel, "The Portland," has just been erected on Carrington-street Bridge. It contains sixty bedrooms, coffee, commercial, and private sitting rooms. The architects were Messrs. Evans & Son.

CRICKET PAVILION, READING.—Prince Christian recently unveiled the Murdoch Cricket memorial tablet, erected in the new cricket pavilion in the County Ground. The Berks County C.C. pavilion has been erected from the designs of Mr. G. W. Webb, architect, of Reading. It is in the old English, half-timbered style, and the building is surmounted by a bell-turret, while in the central gable is a large clock. The principal apartment of the building is the central luncheon room, which measures 40 ft. by 20 ft., and has a refreshment bar, cellar, and all other necessary accommodation. On the left of the main entrance is the members' dressing-room, measuring 25 ft. by 15 ft., with adjoining separate bath-room, lavatory, and other offices; while on the right of the luncheon room a committee room, about 15 ft. square; a visitors' room, about 18 ft. by 15 ft., also with separate bath-room, lavatory, and offices, and also a room and offices for the professionals have been constructed. Attached to the building on this side is a covered stand with terrace, which is reserved for the use of the professionals The floor of the pavilion is throughout raised some 5 ft. from the level of the ground, and the terrace enclosure extends about 20 ft. in front of the building. On the first floor the principal feature is the

balcony running along the front and measuring 45 ft. by 7 ft., which is reserved for the use of members and their friends; this is approached by outside staircases. There is also a scorers' room, with a balcony, and a workshop and store-room, 30 ft. by 14 ft., for the use of the ground men, each approached by a separate outside staircase. Messrs. Lewis Bros. were the contractors for the building of the pavilion.

NEWCASTLE NATURAL HISTORY MUSEUM.—The Hancock Museum, Barras Bridge, has just undergone renovation. The work consisted of repairing the stonework, renewing the glass roof, improving the drainage, and several smaller items. Mr. F. W. Rich was the architect.

PROPOSED NEW THEATRE, LLANDUDNO.—The Llandudno Grand Theatre has been designed by Mr. G. A. Humphreys, in consultation with Mr. E. O. Sachs. It is to front the proposed extension of Mostyn-street. The total cost of the building, including furnishing, fittings, and decoration, is estimated at 14,000*l.*, and the site is to cost 3,000*l.*

NEW INFIRMARY AT ECCLESALL WORKHOUSE, YORKSHIRE.—The foundation-stone has just been laid of a male infirmary which is to be erected in connexion with the Ecclesall Workhouse, at a cost of 25,000*l.* The new infirmary will consist of two blocks, both for males, and an administrative section. Mr. J. D. Webster, of Sheffield, is the architect.

BANK PREMISES, GLASGOW.—The new buildings for the National Bank are to be erected at the south-western corner of Buchanan-street and St. Vincent-street, Glasgow. In each street the length of frontage is practically the same—about 100 ft. The architect is Mr. J. M. Dick Peddie, Edinburgh.

MOYSES' HALL MUSEUM, BURY ST. EDMUNDS.—On the 31st ult., Moyses' Hall, formerly used as a police-station, was opened as a museum of antiquities and curiosities. Recently, under the supervision of Mr. J. Campbell Smith, the Borough Surveyor, the building has been restored for its present purpose, care having been exercised that none of its ancient historic features should be destroyed. During the progress of the restoration work an archway was discovered, connecting the outer with the inner room. The archway, erected with fragments of Norman material, apparently taken from the outer wall at the period when it was rebuilt, seems to belong to a later period than the structure itself.

RAILWAY STATION, DROITWICH.—The Great Western Railway Company has just opened a new railway station at Droitwich. The station was designed by the company's engineers, Mr. W. D. Robotham & Mr. W. K. Woodward. The contractor was Mr. A. Bloxham, of Banbury.

BATLEY TOWN HALL.—Plans for the proposed new town hall, Batley, have been prepared by Messrs. W. Hanstock & Son, architects, of Leeds and Batley. The intended position of the new building is on the Market Hall estate, and the present Market Hall will be removed to permit the erection of the new structure. The estimated cost is 30,000*l.* exclusive of the site, which is the property of the Corporation.

MANOR ASYLUM, HORTON, EPSOM.—This building has just been opened by Mr. N. N. Hubbard, Chairman of the Asylums Committee of the London County Council. Originally the scheme provided for the accommodation of 700 female patients. There were to be four blocks for chronic cases, with 440 beds; three for the infirm, with 176 beds; and two for convalescents, with eighty-four beds. The Council, however, subsequently sanctioned the conversion of one of the blocks for the reception of 110 male patients. Sixty beds are in single rooms. Each block is complete in itself, and has besides the necessary sanitary provision and bath, a ward scullery, clothes, boot, and food stores, and three nurses' rooms. There are two general bath-rooms and a needle-room built off the main corridors, in addition to the accommodation provided in the wards for the purpose. The recreation hall, with stage, is designed to seat 400 people. The visiting-room is arranged in a central position, and a special set of rooms have been provided in connexion with the block nearest the entrance for the reception, bathing, and examination of new cases. A mess-room is provided for the non-resident officers in a position adjacent to their offices. The resident staff, other than those provided for in the wards, will be housed in the mansion-house and its out-buildings. A lodge has been designed for each entrance to the estate. Offices for the chaplain, clerk, steward, and dispenser, and a laboratory and mortuary are provided. The buildings were designed and their erection supervised by the Asylums Committee's Engineer, Mr. W. C. Clifford Smith. The principal contractors were Messrs. Leslie & Co. (temporary buildings), Messrs. Kirk & Randall (alterations to Manor House, &c.), Messrs. Isler & Co. (bore-hole for water and pumping plant), and Messrs. W. Summerscales & Son (laundry machinery). Messrs. J. & F. May supplied the kitchen and scullery plant.

FACTORY PREMISES, NOTTINGHAM.—A block of buildings has just been erected on a site on the Colwick-road, Nottingham. The buildings, in which will be carried on the trade of furniture-making, comprise a saw-mill, the main block of workshops, boiler-house, engine-house, a generating station, which supplies the electricity for lighting the buildings and running the whole of the machinery, and the repairing-shop. The architect was Mr. W. B. Starr, of Nottingham.

BANK PREMISES, DUBLIN.—The business of the present branch of the Hibernian Bank in Dorset-street will shortly be transferred to the new building erected for them at the junction of Dorset-street and St. Joseph's-avenue, formerly known as White's-lane. The architect was Mr. W. H. Byrne, and the builder Mr. Kevin Toole.

PUBLIC BATHS AND WORKING-CLASS DWELLINGS, STRATFORD.—At the Stratford Town Hall recently, Mr. H. H. Law, M.Inst.C.E., held an inquiry on behalf of the Local Government Board into the application of the West Ham Council, for sanction to borrow certain moneys for the erection of public baths at Stratford, and 5,950*l.* for the purchase of land as a site for dwellings for persons of the working class. Mr. Hilleary, Deputy Town Clerk, said the houses which the Council intended to erect would be double tenements, and would be let at 6s. 6d. per week for the half house. The land was situate at Plaistow, within a short distance of a block of 150 houses. Mr. Maurice Russell said the site comprised 16,400 superficial yards, exclusive of roads, with 1,904 ft. frontage, and a depth of nearly 80 ft. The question of the baths, lock-up, and shops was then considered, it being pointed out that sanction was asked to borrow 39,135*l.* Mr. A. Saxon Snell submitted the plans, and explained the arrangement of the building. The building would be erected of red bricks with facings of Portland stone. The bath floors would be of concrete, and the building fireproof throughout.

COTTAGE HOSPITAL, BLAIRGOWRIE, PERTHSHIRE.—It is proposed to erect a cottage hospital at Blairgowrie. The building will be of Blairgowrie Quarry material, with Bannockburn stone facings. The accommodation will consist of two wards of three beds each. A special ward will also be provided for cases that may require to be isolated. The building will also include an operating-room, bath-room, &c. Mr. Lake Falconer, of Blairgowrie, is the honorary architect.

INFECTIOUS DISEASES HOSPITAL, BURNLEY.—A Local Government Board inquiry was held at Burnley recently by Mr. W. W. E. Fletcher into an application by the Burnley Joint Hospital Board for sanction to borrow 6,000*l.* for the erection of an infectious diseases hospital. Mr. F. S. Button is the architect.

REFORMATORY, LOANHEAD, EDINBURGH.—A new reformatory was opened at Loanhead on the 3rd inst. The architect was Mr. T. T. Paterson, of Edinburgh.

NEW GRAMMAR SCHOOL FOR DUDLEY.—The newly-erected grammar school in St. James's-road, Dudley, was opened on the 7th inst. The school is situated in St. James's-road, near the church of that name. The front elevation consists of three large gables, flanked at the western end by a smaller gable set back, and at the eastern end by a small battlemented window and a small tower. In the centre of the roof is a bell-tower. The school and house have been erected from the plans, selected in a competition, of Messrs. Woodhouse & Willoughby, of Manchester, and the building contract has been carried out by Messrs. Webb & Round, of Dudley; the clerk of the works being Mr. George Hancox, of Pensnett. The rear of the building is lower than the front, and there are entrance porches at the eastern and western ends. The basement contains heating chamber, kitchen, and mess-room on the same level as the playground, which is partly covered and will be paved with Davies's patent limestone asphalte. On the ground floor are the porches, entrance hall, master's room, central hall, five class-rooms, lavatory, and cloak-room. There is a teachers' room on the second floor. The central hall is 56 ft. by 28 ft. The dimensions of the class-rooms are 18 ft. 9 in. by 20 ft., and this floor is paved in American birch, laid by Mr. Roger Lowe, of Farnworth, Bolton. The wing extending to the rear consists of the chemical laboratory, preparation room, and lecture theatre. The whole of the premises have been built with Edwards' (Ruabon) red brick and terra-cotta, and are roofed with tiles supplied by Mr. G. Hall, Birmingham.

EXTENSION OF THE BRITISH ART GALLERY.—The additions that have been made to the British Art Gallery at Millbank are now nearly complete. The new galleries consist of ten rooms, of which two are to be devoted to sculpture. The additional space provided will necessitate a rearrangement of the pictures. The architect for the gallery was Mr. Sidney Smith.

DRILL HALL, LANDPORT, PORTSMOUTH.—The new drill hall for the 3rd (Duke of Connaught's Own) V.B. Hampshire Regiment (rendered necessary by the Admiralty taking over the present building for the Naval Barracks) will have a frontage to Stanhope-road. The material will be dark red brick, with Portland stone dressings. The building will consist of a large drill space, round which are grouped the various offices. The drill hall proper occupies the ground floor, its dimensions being 144 ft. by 120 ft.; there will be two galleries. To the right of the main entrance, and leading from the large hall, will be a smaller hall, to be known as the gymnasium and recruits' hall. The dimensions of the second hall are 60 ft. by 46 ft., and dressing-rooms are attached. Over this portion of the building is the officers' mess-room and ante-room. On the ground-floor to the left of the main entrance there are Commanding Officer's room, orderly-room, armoury, men's recreation-room, junior N.C.O.s' room, band-room, and stores. On the first floor over the band-room is the committee-room; and the sergeants' mess occupies a space of about 60 ft. by 26 ft. over the N.C.O.s' room and part of the men's recreation-room. Adjoining the sergeants' mess is a room which will be set apart for the use of the Hampshire Yeomanry and stores for the quartermaster. The building will be mainly of two stories, a third story and a portion of the block being the caretaker's apartments. The plans for the new building have been prepared by Major A. H Bone.

NEW HALLS FOR SPRINGBURN, GLASGOW.—The new halls which the Glasgow Corporation have resolved to erect for the Springburn district will occupy a prominent site at the corner of Millerbank-street and Keppochhill-road. Included in the design are two halls placed together longitudinally, and so arranged that while the entrances, exits, and retiring-rooms for each are quite separate and distinct, they may be let together *en suite* when occasion requires. The main hall measures 77 ft. by 50 ft., exclusive of crush-hall and orchestra, and provides seating accommodation for 1,209 persons. The principal entrances are from Millerbank-street, and these open into a crush-room, from which any part of the hall may be reached. In the dividing wall between the two halls are two sets of double doors, which will be opened when the halls are used *en suite*. The platform entrance is from Keppoch-hill-road, and communicates by means of a corridor under the platform with the retiring-rooms which overlook the lane. On the ground floor is a committee-room, while immediately above are situated the dressing-rooms for the artistes. There is a cloak-room in connexion with the ladies' and gentlemen's retiring-rooms in the basement. In the basement under the main hall a large store for forms, &c., is provided, together with three committee-rooms, which are placed so that they are lighted and ventilated to an area to Keppochhill-road. It is proposed that these rooms should be divided by movable partitions. The lesser hall measures 32 ft by 27 ft., and provides seating accommodation for 408 persons. The principal entrance is from Millerbank-street, and from the entrance-hall a staircase leads upward to the gallery and downward to basement. There are emergency exits at each side of platform. The kitchen is placed in the basement under the lesser hall, and a lift for the convenience of purveyors is provided from the kitchen corridor to the service lobby at the south side of platform. The materials for the exterior will be red freestone and green Westmoreland slates for roofs. The total cost of the building is estimated at 11,404*l.* Mr. W. B. Whitie is the architect.

SANITARY AND ENGINEERING NEWS.

BRIDGE OVER THE SPEY AT BOAT OF GARTEN, INVERNESS-SHIRE.—A bridge is being erected over the Spey at Boat of Garten, and on the 27th ult. the foundation stone was laid. The bridge, which is of some 350 ft. span, is of timber with stone piers and abutments, and was designed by Mr. A. Mackenzie. The contractor is Mr. Charles Mackay, Inverness, the sub-contractor for the mason work being Mr. A. Macpherson, of Newtonmore.

SEWERAGE WORKS, &C., MANCHESTER. — On the 2nd inst. Mr. E. A. Sandford Fawcett held a Local Government Board inquiry, at the Manchester Town Hall, into the application of the Corporation for leave to borrow 30,000*l.* for works of sewerage in connexion with the Moston Brook culvert, and 3,000*l.* for the equipment of the Harrison-street lodging-house. Mr. Hudson, Deputy Town Clerk, said it was intended to spend the 30,000*l.* on the repair of the Moston Brook culvert, which carried the Moston Brook from Green Mount to the River Irk. In August, 1898, the culvert collapsed at Hall's-crescent, Collyhurst, causing serious damage. An inspection of the sewer had been made, and Mr. Wilkinson, C.E., had presented a report to the Corporation in which he recommended the execution of strengthening works in the existing culvert, and the construction of a supplementary culvert at a point near Queen's-road, discharging into the River Irk near Smedley Bridge. The Corporation had adopted this scheme, and the new culvert would be circular, 10 ft. in diameter.—Mr. T. de Courcy Meade, the City Surveyor, gave evidence with reference to the detail working of the scheme. As to the application with regard to the Harrison-street lodging-house, Mr. Hudson said that the construction of a lodging-house had been already sanctioned by the Local Government Board. At a former inquiry estimates were put in for the buildings only, amounting to 21,701*l.*, and no provision was made for the equipment of the house, which was to accommodate 363 men.

THE NEW BEACHY HEAD LIGHTHOUSE.—The lighthouse situated at Belletoute, the second cliff westward of Beachy Head—a structure so familiar to visitors to Eastbourne and its vicinity—will soon be a thing of the past. To the existing light, good and serviceable as it has proved in most respects, there has always been one objection. Situated, as it is, at an altitude of 285 ft. above high water, spring tides, it is frequently capped with fog, and at such times it is more or less invisible. It has, there-

fore, been deemed advisable by the responsible authorities not to place the new lighthouse on the headland at all, but on the foreshore beneath (viz., about one and a quarter mile eastward the old one), where far less fog prevails than higher up, and whence its light will be visible from Dungeness on the eastward around through south to the western limit of the present light. This scheme involves the construction of a massive granite tower, the foundations of which will be laid at a level of 9½ ft. under low water, and temporary dams will have to be formed to admit of the setting of the lowest portions of the work. The tower, which will be rather over 47 ft. in diameter at its base, is to be solid for 47 ft. 6 in. upwards, with the exception of the space required for the storage of water, and its height to the top of the masonry will be 123 ft. 6 in. Above the solid portion will come the rooms, eight in number (the four uppermost ones being 14 ft. in diameter), and finally the lantern, in which will be installed a Dioptric (lenticular) illuminating apparatus of the most modern and approved type, giving two white flashes in quick succession every fifteen seconds. It is expected that the new lighthouse, which is from the designs of Mr. T. Matthews, the engineer-in-chief to the Trinity House, will be completed within three years from this date.—*Daily News.*

SEWAGE WORKS, OSWESTRY.—An inquiry was held on behalf of the Local Government Board by Mr. W. A. Ducat, at Oswestry, on the 2nd inst., into an application by the Town Council for sanction to a loan of 3,500*l.* to meet the cost of proposed new sewage works. In 1896-7 Mr. R. C. Wynne Roberts, the then Borough Surveyor, began a series of experiments as to dealing with the sewage by its purification on bacteriological principles. Mr. G. W. Lacey said the works being constructed consisted of two series of filter beds, nine in each series.

SEWAGE DISPOSAL, GILDERSOME, YORKSHIRE.—At the Urban District Council Offices, Gildersome, on the 1st inst., Colonel J. T. Marsh, R.E., Local Government Board inspector, held an inquiry respecting the application of the Gildersome Urban District Council for permission to borrow 12,500*l.* for purposes of sewerage and sewage disposal. The technical features of the proposed scheme were explained by Mr. John Waugh (engineer) and Mr. G. B. Waugh.

STAINED GLASS AND DECORATION.

MEMORIAL WINDOWS, CONSETT PARISH CHURCH.—Two stained-glass windows have been placed in the chancel of this church, in memory of the late vicar. The windows were designed and executed by Mr. A. O. Hemming, of London.

MEMORIAL WINDOW, LEDBURY CHURCH, HEREFORDSHIRE.—A stained glass window, the work of Mr. C. E. Kempe, has just been erected in Ledbury Church in memory of the late Mr. C. E. Maddison.

ST. ANDREW'S CHURCH, ECCLES, MANCHESTER.—An oak reredos, consisting of shafts, pinnacles and arcading, has just been dedicated in this church. The whole forms a frame to a sculptured panel in high relief, designed and modelled by Mr. Percy Bacon, subject "The Lord's Supper." The reredos was designed by Mr. Frank P. Oakley, and executed by Messrs. Percy Bacon & Bros. of London, under the supervision of the architect.

FOREIGN.

FRANCE.—A special inquiry is to be set on foot shortly to ascertain if there are still any dwelling-houses in Paris in so insanitary a condition as to constitute a public danger, and also to inquire into the general condition of working-class dwellings in the city.——M. Aimé Morot has resigned his position as professor of painting at the Ecole des Beaux-Arts. It is probable that M. François Flameng will succeed him.——M. Loviot, the eminent architect, has been commissioned to prepare the plans for the temporary building for next year's Salon. It will be on a site comprised between Avenue Saxe, Avenue Breteuil, Rue Barthélemy, Rue Bellard, and Rue Perignon. The principal entrance will be in the Place de Breteuil. The plan will comprise a semi-circular central garden with galleries giving access to the picture saloons.——The Académie des Beaux-Arts has been occupied with the election of two new members in place of the late M. Duplessis and the late Marquis de Chennevières. In the room of the former it has elected M. Guiffrey, Director of the Gobelins, and author of a history of tapestry and of various critical works on art. The place of the Marquis de Chennevières is taken by M. Rougon, also a well-known writer on art.——The Ministère des Affaires Etrangères has been officially informed that next year the United States Government intend to establish a "Prix de Paris," corresponding with the Prix de Rome in France, and with similar objects.——New post and telegraph offices have been built at Pau and Montélimar.——The "Société des Architectes des Bouches de Rhône" has organised four competitions in decorative design:—the first for craftsmen; the second for pupils of the Ecole des Beaux-Arts; the third for those of the Ecoles Professionelles; and the fourth for work done by women.——The new Town Hall at Argenteuil was opened last Sunday. The architects are MM. Maistrasse and Berger and M. L. Batton.——The death is announced, at the age of sixty, of M. Pierre Outin, the painter. He was a pupil of Cabanel and Lecomte, and exhibited portraits and *genre* pictures almost every year at the Salons. Among his works we may mention especially "Le Mort du Gentilhomme" (Salon of 1868), "L'Amateur" (1872), "Manon Lescaut" (1877), "Quentin Durward" (1878), and "Courses d'Automme" (1880). He exhibited a portrait in the Salon of this year.

SANITATION OF BOMBAY.—We understand that the Bombay Municipality have retained the services of Mr. Santo Crimp, M.Inst.C.E., of Westminster, to advise them on the sanitation of the city. Mr. Crimp will proceed to Bombay in September next, and will probably remain there about two months. One of the most important points which Mr. Crimp will have to consider will be the question of lowering the level of the subsoil water under the city, an exceedingly difficult operation, having regard to all the circumstances. That the drying of the subsoil in such a climate as that of Bombay is of the greatest importance, from a sanitary point of view, cannot be questioned, and it is to be hoped that Mr. Crimp will be able to devise some method by which this can be accomplished, and thus help to lessen the unhealthy condition of the city.

MISCELLANEOUS.

THE YORK-STREET INSANITARY AREA, LEEDS.—An inquiry was held at the Leeds Town Hall on the 30th ult., by Colonel J. T. Marsh, R.E., Local Government Board Inspector, with reference to the Provisional Order, confirmed by the Act of 1896, in regard to the housing of working classes displaced under the York-street insanitary area scheme. What the Corporation ask is the exclusion from the scheme of a lodging house in Harper-street, and of certain land adjoining the North-Eastern Railway, and the sanction of the Board to the disposal of certain land comprised in the scheme for purposes other than the erection of dwellings for the accommodation of persons of the working class.

THE HOLBORN TO THE STRAND IMPROVEMENT SCHEME.—The London County Council Improvements Committee propose to acquire for 200,000*l.*, for the housing of 2,070 persons of the labouring class, about to be evicted from the Clare Market and Drury-lane district, the site, in part, of Reid's Brewery, Clerkenwell-road (formerly Meux's in Liquorpond-street). Further negotiations are in progress for the purchase of all the site between Hatton Garden and Gray's Inn-road, which will provide room for buildings to accommodate nearly 1,000 more.

THE LAKES OF KILLARNEY.—The Killarney district is owned by the Earl of Kenmare and Mr. Herbert, of Muckross. The latter proprietor, having lately disposed of his agricultural land to the tenants, is now about to sell the mansion-house and demesne which have belonged to his family during a long period. The property, within which lies the middle lake, comprises deer forests, game and fish preserves, lakes and islands, extending over 13,000 acres; the sale will include Muckross Abbey, the Devil's Punchbowl, Torc Mountain, and Waterfall, O'Sullivan's Cascade, Old Weir Bridge, the Meeting of the Waters, and many other famed features of the locality. It has been suggested that the property, for which a tentative offer of 30,000*l.* has been refused, should be purchased by the State for dedication to the public; the levying of tolls during some years past seems to preclude the establishment of public rights of way.

ST. DUNSTAN'S, FLEET-STREET.—Dr. Tristram, Q.C., Chancellor of the Diocese, has agreed, provisionally, to grant a faculty for the sale of the site on the west side of the church tower. The proposed enlargement of the Law Life Assurance Society's premises (John Shaw, the younger, architect) will be carried out after the designs of Mr. W. E. Clifton, and the purchase-money, 4,500*l.*, is to be devoted to the erection of a rectory-house on the east side of the tower. The sale is made under an Act, 10 Geo. IV., c. 96, appointing trustees to pull down the old church and erect a new one, with powers of sale over such parts of the old site and any land purchased under that Act as might not be required. The trustees sold the ground now occupied by the Law Life Society and (on the east side) by Sir John Leng, M.P., proprietor of the *Dundee Advertiser.* The present sale will result in covering the two fore-courts on either side of the tower, which rises from the ground, and in blocking up the body of the church as now seen from the street.

KILDRUMMIE CASTLE, ABERDEENSHIRE.—It is stated that the recent purchaser of this property intends to build for himself a new castle upon the old site. Kildrummie, situated on an eminence sloping to an affluent of the Don, was built by Gilbert de Moray, Bishop of Caithness, during the reign (1214-49) of Alexander II., and ranks as one of the largest of its kind in Scotland. It was formerly owned by David, Earl of Huntingdon, Robert Bruce, and the Earls of Mar. The curtain walls, having a gateway on the south side and towers at the angles, enclose an enceinte hexagonal on plan, within which stand apart the great hall and the chapel. At the north-west angle is the now ruined Snow tower, 53 ft. in diameter, which contained a draw-well. Against the north wall, 200 ft. long, abuts a block having the hall, 73 ft. by 41 ft., on its first floor. Of the chapel, which projects at an angle from the east curtain wall, only the east end remains; it has three thirteenth-century lancet windows. Edward I. captured the castle in 1306, and made Nigel Bruce prisoner. It is conjectured that to the subsequent occupation by the English is due the square-headed trefoil over a two-light window in the north-east tower. James III. bestowed Kildrummie upon Robert Cochrane, the architect, to whom was granted, it is said, a patent as Earl of Mar, and who was beheaded at Lauder Bridge (1482). The masonry of the castle consists of well coursed and dressed ashlar, of freestone, brought from a distance.

THE ELECTRIC LIGHTING OF PENZANCE.—Mr. Frank Latham, C.E., Surveyor for the Borough of Penzance, has prepared an exhaustive scheme for the supply of electricity to the district of Penzance and the construction of a refuse destructor in the Borough. He considers the wisest course for the Corporation to pursue would be to obtain an order which will enable them to supply electricity to, firstly, the Esplanade, Morrab-road, Alexandra-road, Chapel-street, Market Jew-street, and Alverton-road; and, secondly, the whole Borough. The system of electric lighting which he considers would best answer the requirements of the district is the low tension, continuous current, three-wire system, with accumulators. As to the cost, he estimates the installation would cost 21,365*l.*, and the annual expenditure for working and maintenance 3,468*l.*, making the cost per light 18s. 7d. per annum.

MEMORIAL TABLET, ST. BOTOLPH, BISHOPSGATE.—A tablet to the memory of the late rector of the parish (the Rev. William Rogers) was dedicated recently in this church. Above the panel is a profile portrait in low relief. The monument was designed by Mr. J. F. Bentley, and was executed by Messrs. Farmer & Brindley, of Westminster Bridge-road.

CAPITAL AND LABOUR.

SETTLEMENT OF THE BUILDING DISPUTE AT SUNDERLAND.—The builders' labourers at Sunderland decided on the 1st inst. to return to work at the old rate of 6½d. per hour. They will receive time and a quarter for overtime, and 1d. per hour extra for work in connexion with dirty drains, &c. The employers have agreed to withdraw their notice for a reduction of ½d. per hour. By a re-arrangement of meal hours the labourers will work the same hours as the journeymen whom they serve. There still remain a few points in regard to certain rules which the employers are prepared to discuss after the men return to their work. About 400 labourers originally came out on strike. The dispute started on April 15.

BRICKLAYERS' STRIKE AT ST. HELENS.—About 200 bricklayers and masons are on strike at St. Helens. Six months' notice, which under the trade rules must be given when an alteration of wages or working hours is desired on either side, was handed in on December 1 by the men. The men want to be paid at the rate of 9½d. an hour instead of 9d. as at present; secondly, they request that there shall be only one apprentice to every four men, and not more than three employed by one firm, instead of a proportion of one apprentice to three men, and not more than six in a shop, as under present conditions; thirdly, they ask that the allowance of walking time be placed on a more favourable basis for them. The masons number about twenty, and their demand also is for an extra ½d. per hour, which would bring their wages up to the Liverpool standard.

THE NORWICH BUILDING TRADE.—The points raised as to wages and rules by the various classes of workmen in the Norwich building trade have been amicably settled, after repeated conferences, and ½d. per hour advance will be given to carpenters, bricklayers, masons, builders' labourers, and painters.

CHESTER BRICKLAYERS' LABOURERS.—The Chester bricklayers' labourers have discontinued work in consequence of their demand not having been granted by their employers. Six months ago they demanded a rise of their wages from 5½d. to 6d. per hour.

THE STRIKE AT MESSRS. DOULTON'S.—The strike at Messrs. Doulton & Co.'s Worcestershire clayfields, which commenced seven weeks ago, has become a lock-out. Some men had obtained fresh situations, but others, not receiving pay from the union, returned to work. More hands followed, but an intimation was given that union men would not be reinstated. The union executive have resolved to continue strike pay.

BRICKLAYERS' STRIKE AT WELLINGBOROUGH.—The dispute in the building trade at Wellingborough reached a crisis on the 5th inst. by the bulk of the bricklayers connected with the district branch of the Amalgamated Society of Bricklayers, Wellingborough ceasing work. Some little time since it appears that the officials of the society on behalf of the members put in for an advance of wages, the standard rate here being 7½d. per hour, and for an alteration in the code of working rules. As, however, a halfpenny advance was obtained last year, and many of the men are already receiving more than the standard, the demand for a further increase was withdrawn, and it was decided to restrict the demand to a revision of the working rules, the chief point at

issue being the number of apprentices. On some firms it is alleged the greater proportion of hands employed are boys and young apprentices, and the men desire a restriction to be put upon this, so that the number of apprentices employed in proportion to men shall be limited and defined. To this the masters demur, and, acting upon a resolution passed at a meeting of the men on Saturday, a large number of the bricklayer came out on strike.

LEGAL.

IMPORTANT POINT UNDER THE LONDON BUILDING ACT, 1894.

THE case of Carrit *v.* Godson came before a Divisional Court of Queen's Bench, composed of Justices Day and Lawrance, on the 5th inst., on the appeal of the London County Council from a decision of a Metropolitan Magistrate in a matter concerning the alleged contravention of the London Building Act, 1894. It appeared from the special case that the respondents, Messrs. G. Godson & Sons, were engaged in erecting the "Horse and Groom" public-house, in St. John-street, Clerkenwell, it being a building exceeding ten squares (of 100 square feet each) in area, and to be used as a fully licensed house, but not as a hotel, the ground floor consisting of a bar, lavatory, and pot room; the first floor of a public room, lavatory, spirit store room, kitchen, larder, and scullery; the second and third floors of bed rooms and living rooms. The only means of communication between the floors is a staircase terminating in the lobby on the ground floor. The licencee would live in the building and the whole building is included in the license. A notice of irregularity required the respondents to construct throughout of fire-resisting materials all passages, staircase, and other means of approach to the part of the building to be used as a dwelling-house under Section 74 of the Act. In order to get from the street to the lobby and staircase it is necessary to enter the door in the front of the bar and to cross thence through the bar to the lobby which gives access to the staircase. The door separating the lobby from the bar is to be and the staircase itself and lobby are constructed of fire-resisting materials, but the floor and other parts of the bar are not of fire-resisting materials. The lobby which gives access to the staircase also opens into a back yard, extending from the whole width of the house, and to a depth of 100 ft., surrounded in part by buildings and in part by a wall 8 ft. high at its lowest part. There is no exit from the yard except that which leads into the lobby. The appellants contended that the building was one used in part for the purposes of trade, and in part as a dwelling-house, and was so used within the meaning of Section 74, Sub-section 2, and that the way through the bar to the lobby and staircase was, under the circumstances, a means of approach to the part of the building to be used as a dwelling-house, and that not being constructed throughout of fire-resisting materials it was in contravention of the Act in question. The respondents, however, contended that the building was not a building used in part for purposes of trade and in part as a dwelling-house; that it was not within the section; and that, even if it were, the way through the bar of the public-house to the lobby was not a means of approach to the part of the building to be used as a dwelling-house. The magistrate decided that the building was not a building used or intended to be used in part for the purposes of trade and in part as a dwelling-house, and that it was not so used or intended to be used within the section. He also held that, even if it were, the way through the bar to the lobby was not, under the circumstances, a means of approach to the part of the building to be used as a dwelling-house, and dismissed the summons.

Mr. Horace Avory appeared for the London County Council, and Mr. A. F. Wootten for the respondents.

At the conclusion of the arguments of counsel, Mr. Justice Day, in giving judgment, said that there was great difficulty in applying the section to a building of this description. The only matter in which it came within the section was because it was of the requisite size. He could not see that this was a "building used in part for purposes of trade and manufacture, and in part as a dwelling-house." A publican carried on his business all through the licensed premises. In addition, there was in this building a staircase leading to an open space, and that staircase was made of fire-resisting material. He thought that the learned magistrate's construction of the section was right.

Mr. Justice Lawrance concurred.

The appeal was therefore dismissed.

ACTION AGAINST AN ELECTRIC LIGHT COMPANY FOR AN ALLEGED BUILDING TRESPASS.

THE case of Prifchard *v.* The Bromley (Kent) Electric Light and Power Company, Limited, came before Mr. Justice Ridley, sitting without a jury, in the Queen's Bench Division on the 31st ult. and the 1st inst. It was an action brought by the plaintiff, Mr. Alfred William Pritchard, to restrain the defendants from committing an alleged building trespass, there being also a claim for damages.

It appeared that the plaintiff in 1892 became the owner in fee of certain land and premises in West-street, Bromley, and it was said that the defendants had established in the centre of the town of Bromley, and immediately contiguous to the plaintiff's premises, extensive works for the generation of electric power and light for the purpose of supplying light and electric power to the town of Bromley and the surrounding district. It was alleged that when the plaintiff purchased his premises the situation was not as valuable as it subsequently became, the premises being situated in the centre of the town of Bromley. On the south side of the plaintiff's building there were two windows which were the only windows giving light on that side. On the western side there were three other windows and also a doorway. On the eastern front of the building there were two windows and a doorway, which said windows and doorway were alleged to have existed for about fifty years. The plaintiff's case was that the defendants by themselves and their predecessors in title had committed the following trespass and nuisance, and had deprived him of light and air to his premises:—

1. By the erection of a wall or high wooden hoarding along the entire length of the building on the south side, and only situated at a distance of a few inches from his building, and which, besides being on the plaintiff's land, entirely covered up the two windows on the south side of his premises.

2. By pulling down a boundary wall between his and the defendants' premises on the west side, and leaving the plaintiff's land and premises unprotected and covered with rubbish, and by then erecting for the purpose of their (defendants') building a very high wall, which completely overshadowed the west windows of plaintiff's building, and so deprived him of light and air.

3. By taking out foundations and laying in concrete partly on the land of the plaintiff for the said wall.

4. By trespassing on the plaintiff's land by their workmen and agents, and interfering with the plaintiff's rights.

5. By placing along the front of the building a notice board 11 ft. long and 3 ft. deep. The plaintiff further alleged that the defendants had excavated adjacent to the wall immediately adjoining his premises on which the defendants had erected for the purpose of their works a shaft or chimney stack 120 ft. high and 22 ft. at the base, which he said would interfere with his rights of property and also with his light and air. The defendants, by their defence, denied that the plaintiff had acquired the prescriptive right to light in respect of the south windows and doorway and generally denied the plaintiff's allegations. They also said alternatively that what they did was by virtue of the leave and licence of the plaintiff verbally given by him to Mr. Graty, the builder who was executing the work, in May, 1898. They further denied that the chimney stack would interfere with the rights of the plaintiff, and also that their works were a nuisance.

Mr. C. E. Jenkins, Q.C., and Mr. Yelverton appeared for the plaintiff; and Mr. Jelf, Q.C., and Mr. Hume Williams, Q.C., for the defendant company.

His Lordship, after hearing the evidence, in giving judgment, held that the plaintiff had failed to make out his case with regard to the hoarding on the south side of his premises, and on that issue gave judgment for the defendants. He held, however, that the defendants had committed a technical trespass by having placed concrete on the land of the plaintiff as claimed in paragraph 3 of the Statement of Claim and on this head awarded the plaintiff one farthing damages. With regard to the issue as to the obstruction of light and air, his Lordship awarded the plaintiff 35*l.* damages and gave him the general costs of the action. His Lordship gave the defendants the costs of all the issues on which the plaintiff had failed to prove his case.

MANCHESTER COMPENSATION COURT:

CLAIM AGAINST A BUILDER AND JOINER.

ON the 1st inst. Mr. Adshead Elliott, the arbitrator appointed by Judge Parry to hear cases under the Workmen's Compensation Act, sat at the Manchester County Court to adjudicate in two matters.

In the first case, Frederick Harrison, of 248, Collyhurst-road, Harpurhey, was the applicant, and Charles Robert Richard Lambert, of Dutton-street, Strangeways, joiner and builder, the respondent. Mr. W. Cobbett, who appeared for the applicant, a labourer, twenty-three years of age, stated that his client was engaged as a labourer by the respondent, and was doing machine work at the time of the accident. This happened on January 31, at the respondent's workshop in Dutton-street. The applicant was planing a piece of wood upon the planing machine, when his right hand was caught by the revolving knives. The consequence was that he lost the portions of the first three fingers of the right hand above the second joints, and the little finger was permanently stiff. He was totally incapacitated for work at present, and had been since the accident, and would be for three months, when he would only be able to take up work which did not involve the full use of the right hand. His average weekly earnings had been 15s. 8d., and when he could return to work he might earn about 8s. a week. The amount claimed as compensation was 7s. 10d. a week. Mr. Jordan, for the respondent, denied that Harrison was planing at the time of the accident, or that he was doing machine work at all. He was told to hand pieces of wood to the foreman, and then go to the back of the machine and take the planks away after they had been cut. He had no cause to go within 5 ft. or 6 ft. of the machine, and he had no right to do anything such as he said he was doing. He was expressly ordered and told that he must not touch the machine.

The Arbitrator awarded the applicant 7s. 10d. a week until the present time, and 3s. a week afterwards.—*Manchester Courier.*

PAVING FOOTWAYS.

AT Lambeth Police-court, Mr. Hopkins gave his decision in regard to a summons taken out by the Camberwell Vestry against Mr. Andrew James Walke, the owner of a house in East Dulwich-road, to recover the sum of 23*l.* 14s. 9d., being the apportioned cost of paving the footways of that thoroughfare. The summons, which was taken out under the 105th Section of the Metropolis Local Management Act, 1855, was first before the Court three weeks since, when Mr. McMorran, Q.C., appeared for the Vestry and Mr. Horace Avory represented the defendant. The case, which was a test one, turned upon the question whether the road was a "new street" within the meaning of the Act. The Vestry contended that it was, and proposed to pave the footways from the "King's Arms" to Goose Green, and to apportion the cost among the adjoining owners. It was admitted that some years since the Vestry tar-paved the footpaths, but it was contended that the work which was then done was in the nature of temporary as distinguished from permanent works. For the defence it was argued that the tar-paving put down by the Vestry was in the nature of permanent work, and that consequently they had exhausted their powers under the 105th Section of the Metropolis Local Management Act. Mr. Hopkins remarked that if he thought the decision in this case really turned upon the question whether or not the road could now be held to be a new street within the Section, he would feel compelled to arrive with considerable doubt at the conclusion that it might so be held. But the case was evidently so near the line, as he understood the cases, that he should state the agreed facts for the information of the Divisional Court, and leave the decision upon that point to the Court, as he was not able upon that point to find any fact outside the agreed facts which would help the Court to a conclusion. But he thought the decision might turn upon another point, and might be reached by a shorter road than the difficult question of a new street or not. He enumerated several findings which he considered brought the case within the case of the "Camberwell Vestry *v.* Hunt," and did not think the Vestry could support an assessment upon the frontagers. He therefore dismissed the summons. On the application of a solicitor representing the defendant, Mr. Hopkins allowed twenty guineas costs as against the Vestry. —*Times.*

MEETINGS.

FRIDAY, JUNE 9.

Institution of Civil Engineers.—Engineering Conference (concluded).

Institution of Junior Engineers.—Visit to the Bankside Works of the City of London Electric Lighting Company. 6.30 p.m.

MONDAY, JUNE 12.

Royal Institute of British Architects.—General (business) meeting (1) to receive report of scrutineers *re* election of council, committees, &c., for next session; (2) election of candidates for membership; (3) Mr. H. Hardwicke Langston to move the following resolution: "That in the opinion of this meeting it is desirable to put a suitable and prominent inscription on the street front of No. 9, Conduit-street, indicating that those premises are occupied by the Royal Institute of British Architects"; (4) to receive and consider the Report of the Special Committee appointed by the Council to consider the Administration of Building By-laws in non-Metropolitan Districts. Also to receive and consider a resolution on Party Structures, passed by the Special Committee above mentioned, and approved by the Council. 8 p.m.

WEDNESDAY, JUNE 14.

Carpenters' Company.—Examination at their Hall. 6 to 10 p.m.

THURSDAY, JUNE 15.

Society for the Encouragement of the Fine Arts.—Third conversazione.

Society of Antiquaries.—8.30 p.m.

Institute of Sanitary Engineers (Incorporated).—Half-yearly general meeting for the reception of balance-sheet, annual reports, &c. 8 p.m.

Carpenters' Company.—Examination at their Hall. 6 to 10 p.m.

FRIDAY, JUNE 16.

Carpenters' Company.—Practical Examination at the Company's Schools, Great Titchfield-street. 9.30 to 5.30.

SATURDAY, JUNE 17.

People's Palace Architectural Society.—Visit to Drapers' Hall, E.C. 3 p.m.

Carpenters' Company.—Viva Voce Examination at the Hall. 12 noon.

Incorporated Association of Municipal and County Engineers.—Northern District Meeting at Whitehaven.

PRICES CURRENT OF MATERIALS:

WOOD.*

Per Petersburg standard hundred.

	£ s. d.	£ s. d.
White Sea: first yellow deals	17 5 0	18 5 0
Second do.	13 10 0	15 0 0
Third do.	11 0 0	11 10 0
Battens, 40s., 30s., and 15s. less respectively.		
Petersburg: first yellow deals	12 0 0	14 10 0
Second do.	11 0 0	12 10 0
Battens, 30s. and 20s. less respectively.		
Petersburg, white deals	10 0 0	12 0 0
Do. white battens	8 0 0	9 10 0
Riga, white deals	8 10 0	9 10 0
Swedish mixed yellow deals	13 10 0	17 0 0
Third do.	12 10 0	14 10 0
Fourth do.	11 0 0	12 0 0
Fifth do.	10 0 0	11 0 0
Battens, 30s., 20s., and 10s. less respectively.		
Whitewood, 10 to 20 per cent. less.		
Finnish unsorted yellow deals	10 0 0	10 10 0
Battens, 10s. and 5s. less respectively.		
Whitewood, 5 to 10 per cent. less.		
Norwegian second yellow battens	8 0 0	9 0 0
Third do.	7 10 0	8 10 0
Fourth do.	7 0 0	8 0 0
Whitewood, 10s. less.		
Danzig, Crown Deck deals, per 40 ft. 3 in.	0 15 0	1 5 0
Brack	0 12 0	1 0 0
St. Lawrence Pine deals, &c., per P.S.H.:—		
1st, Bright and Dry, regular sizes	19 0 0	25 10 0
" " oddments	12 0 0	18 15 0
2nd " regular sizes	14 0 0	17 5 0
" " oddments	9 10 0	13 0 0
3rd " regular sizes	9 5 0	10 5 0
" " oddments	7 0 0	8 10 0
4th " regular sizes	6 5 0	7 5 0
" " oddments	5 15 0	6 15 0
St. Lawrence Spruce deals, &c.		
First, regular sizes	8 5 0	10 5 0
Second "	7 5 0	8 5 0
Third "	7 0 0	7 15 0
Fourth "	5 15 0	6 15 0
Oddments and battens at 20s., 10s., 7s. 6d., and 5s. less respectively.		
New Brunswick Spruce deals, &c.	7 0 0	7 15 0
Oddments, battens, and fourths	6 5 0	7 5 0
United States pitch pine planks and boards	8 0 0	12 0 0
Prepared Boards, per square		
1½ by 6½ and 7 in. 1st yellow	11 6	14 9
" " 2nd "	10 0	11 9
1 by 6½ and 7 in. 1st "	8 6	10 9
" " " white	8 0	8 9
" " 2nd yellow	8 0	9 9
" " " white	6 6	7 3
⅞ by 6½ & 7 in. 1st & 2nd yellow	7 3	8 0
" " " white	6 9	7 6
⅞ by 6½ and 7 in. 1st yellow and white (grooved, tongued, and beaded)	6 3	8 9
⅞ by 6½ and 7 in. 2nd yellow and white (ditto)	5 3	7 6
⅝ by 6½ and 7 in. 1st yellow and white (ditto)	5 3	6 0
⅝ by 6½ and 7 in. 2nd yellow and white (ditto)	4 9	5 6
Narrower widths at 10 per cent. less.		
3rd quality at 15 per cent. less than 2nd.		
Danzig and Memel Fir Timber— per load		
Best middling	2 10 0	3 10 0
Good middling and Second	2 0 0	3 5 0
Common middling	1 10 0	2 10 0
Undersized	1 10 0	1 15 0
Swedish and Norwegian Balks	1 5 0	1 15 0
Baltic Oak Timber—		
Danzig and Stettin—Large	3 10 0	4 0 0
Small	2 0 0	2 5 0
Quebec Timber per load		
Yellow Pine	4 12 6	6 5 0
Oak	4 7 6	6 10 0
Elm	3 17 6	4 17 6
Ash	3 2 6	4 7 6
Birch	3 10 0	5 10 0
New Brunswick, &c., Birch	2 5 0	3 0 0
American Pitch Pine Timber	2 17 6	3 10 0
Wainscot, per log, 18 cubic ft.—		
Crown (Eng. & Dutch) } nominal	6 0 0	7 15 0
Brack } nominal	5 5 0	6 5 0
Lathwood, per cubic fathom—		
Petersburg	4 0 0	6 10 0
Riga and Danzig	4 10 0	5 10 0
Norway Poles, per ft. run	0 0 1	0 0 1½
Oak Staves, per mille full size pipe		
Memel, Crown	210 0 0	220 0 0
Brack	180 0 0	190 0 0
Danzig	165 0 0	175 0 0
Bosnia, single Barrel (nominal)	98 0 0	30 0 0
United States, Pipe	35 0 0	42 10 0
Hogshead, extra heavy and double extra	27 10 0	32 10 0
Indian Teake per load	11 5 0	16 5 0
British Guiana Greenheart	0 0 0	8 0 0
Mahogany, per foot superficial—		
Honduras, cargo average	0 0 4½	0 0 6
Nicaragua, do.	0 0 4¾	0 0 5½
Tabasco, do.	0 0 4	0 0 6½
Mexican, do.	0 0 3½	0 0 4
Panama, do.	0 0 3	0 0 4
African, do.	0 0 3½	0 0 5
Cuba, do.	0 0 5½	0 0 7½
St. Domingo, do.	0 0 5	0 0 7
Do. Curls (good to prime)	0 0 9	0 1 3
Walnut, American (logs)	0 2 3	0 4 6
Do. do. (planks and boards)	0 2 0	0 7 6
Italian, per foot superficial	0 0 3	0 0 7½
Black Sea, per ton	6 0 0	12 0 0
Satin Walnut (logs) per foot cube	0 1 0	0 1 3
Satin Walnut (planks and boards)	0 2 0	0 2 9
Sequoia (Californian redwood), per foot cube	0 1 9	0 2 0
Whitewood, American (logs)	0 1 3	0 1 6
" " (planks and boards)	0 1 6	0 2 9
Quartered oak " " "	0 2 3	0 4 0
Kauri pine (logs)	0 1 9	0 2 0
" " (planks)	0 2 3	0 2 9
Jarrah (planks)	0 2 3	0 2 6
Lancewood spars each, fresh and large	0 6 0	0 10 0
Lancewood spars, ordinary to fair	0 4 0	0 6 0
Degame spars	0 8 0	0 12 6

METALS.

	£ s. d.	£ s. d.
IRON—Pig, in Scotland ton	3 5 1	0 0 0
Bar, Welsh, in London	6 0 0	6 5 0
Do. do. at works in Wales	5 15 0	5 17 6
Do. Staffordshire, in London	6 5 0	7 10 0
COPPER—British cake and ingot	80 0 0	80 10 0
Best selected	80 10 0	81 0 0
Sheets, strong	82 0 0	84 0 0
Chili bars	75 7 6	0 0 0
YELLOW METAL lb.	7d.	7½d.
LEAD—Pig		
Spanish ton	14 5 0	0 0 0
English Com. Brands	14 10 0	0 0 0
Sheet, English, 6 lbs. per sq. ft. and upwards	15 10 0	0 0 0
Pipe	16 0 0	0 0 0
ZINC—English sheet ton	31 0 0	0 0 0
Vieille Montagne	31 10 0	0 0 0
Spelter	27 5 0	27 10 0
TIN—Straits	117 0 0	0 0 0
Australian	117 2 6	117 12 6
English Ingots	119 10 0	120 10 0
Banca	114 0 0	0 0 0
Billiton	113 0 0	0 0 0

OILS.

Linseed ton	19 15 0	0 0 0
Cocoanut, Cochin	29 5 0	0 0 0
Do. Ceylon	25 15 0	0 0 0
Palm, Lagos	24 0 0	0 0 0
Rapeseed, English, pale	23 5 0	0 0 0
Do. Brown	21 15 0	22 0 0
Cottonseed ref.	16 5 0	17 0 0
Oleine	17 0 0	19 0 0
Lubricating U.S.	0 5 6	0 7 6
Do. Black	0 5 0	0 6 0
TAR—Stockholm barrel	1 6 6	0 0 0
Archangel	1 0 0	0 0 0
Turpentine	33 15 0	34 0 0

* The prices named are for the wood as imported and landed in the docks. Ten per cent., approximately, should be added in order to arrive at the current trade prices.

RECENT PATENTS:

ACCEPTED SPECIFICATIONS.

Open to Opposition until July 31.

[1898] 11,377, Fowler, Manufacture of Acetylene. 11,473, Hartley, Coal-saving Attachment for Fire Ranges, with a Bar for Flat Irons and Cooking Purposes. 11,837, Loesche & Zschunke, Stone Cutting Machine. 11,847 and 14,498, Hargreaves & Poulson, Sand, &c., for Making Moulds and Cores. 11,944, Gimsons, Tack or Nail Driving Machinery. 12,011, Deimel, Lehmann, & Sylten, Electrical Gas Igniters. 12,211, Wood, Varnish. 12,470, Krassellet, Hinges. 12,548, Weir, Brickwork of Water Tube Steam Boilers. 13,408, Addicott & Holland, Ash Curbs for Fireplaces. 13,968, Forbes, Acetylene Lamps. 14,144, Parkinson, Generator for Acetylene Gas Lamps. 14,303, Robinson, Public Lamp Standards. 14,773, Rippingille's Albion Lamp Co. & Hancock, Closing Devices for Oil Containers of Oil Lamps and for Oil Cans, &c. 14,824, Babbe, Pannikins for Carrying Meals. 15,046, Ozias, Weighing Apparatus. 15,084, Simmance & Abady, Rapid Water Heating by Gas, &c. 15,466, Brierley, Outdoor Seats. 15,900, Causer, Rack Pulleys. 15,921, Cocker, a Dust, Draught, and Rain Excluding Appliance for use with Sliding Window Sashes. 16,076, Spiers, Construction of Portable Sectional Buildings of Wood and Iron, or other Composite Materials. 16,132, André, Gas Cooking Apparatus, Ovens, &c. 16,156, Halls & Halls, Incandescent Gas Burners. 16,228, Williams & Normanton, Cord Shortening Apparatus for Lamps. 16,295, Rix, Moulding Pottery, &c. 16,348, Rutnagur, Water-waste Prevention. 16,358, Leggott and W. & R. Leggott, Regulating Skylights. 16,454, Slating Roofs. 17,153, Bysouth, Stair-treads and Coverings for Subways, Landings, &c. 21,328, Greenwood, Guards for Circular Saws and Similar Machinery. 22,277, Müller & Gareis, Automatical Gas and Vapour Igniters. 23,454, Dey & Dey, Workmen's Time-recorder. 23,832, Wise, Derrick Swinging Gear. 26,006, Butler & Minty, Sliding Window-sash Fastener. 26,129, Standing & Dixon, Intermittent Siphonic Flushing Apparatus. 26,790 and [1899] 6,028, Allgemeine Elektricitäts Gesellschaft, Current Conducting Connexion between Electrical Conductors and Electrical Resistances with Small Heating Capacity. 27,358, Cassels, Combined Bath and Washbasin. 27,506, Alda, Doors for Use in Ventilating Mines and for other purposes. [1899] 2,371, Naturin, Regenerative Gas Burners. 4,774, Heaton & Smith, Electrical Cut-out or Fuse. 5,375, Merz, Saws or Sawing Devices for Cutting Metal Cold. 6,152, Heard & Snyder, Subdividing Laminated Material. 6,266, Cheffins, Cranes for Excavating and Dredging. 6,311, Gehre, Artificial Stone. 6,584, Horst, Interchangeable Coal and Gas Grate. 6,967, Sayre, Holders for Lamp Globes, Shades, and Reflectors. 7,086, Almon, Machines for Sand-papering, Dressing, or Finishing Wood, &c. 7,579-80, Cloos, Electrical Switching Apparatus. 7,628, Jordan, Stove Cover and Gas or Vapour Burner. 7,966, Feltus, Combination Tool. 8,231, Marshall & Faulds, Baking-ovens. 8,387, Körting, Ceiling Blocks and Slabs. 8,388, Browne and Fraser & Chalmers, Raising Water from Mine Shafts and other places. 8,395, Smethurst, Means for Securing Wires in Fencing Standards, &c. 8,401, Folding Cabinet for Vapour and Hot-air Baths. 8,541, Klein, Flushing Apparatus. 8,547, Park. Centrifugal Pumps, especially those used in Dredging Operations. 8,733, Smillie, Screw Cutting Tools. 8,796, Woolliscroft & Todd, Presses for Bricks and other Blocks. 8,820, Staveley & Parsons, Electrical Signals or Indicators.

ABSTRACTS OF PATENTED INVENTIONS.

2,784.—ELECTRICAL SWITCHES: *O. C. Immisch.*—The purpose of the invention is to prevent injurious sparking at a switch's main contacts; a contact is carried on, but is insulated from the switch arm, and when the main contact is broken, a circuit is completed through another contact, a core, and a coil, the core being at once drawn up, whereby the circuit is broken.

2,812.—WALLS, SLABS, AND PAVING: *J. W. Klinck & W. Cooke.*—Facing-slabs are fashioned with tongued and grooved interlocking edges, and with grooves in imitation of brick-work joints, and are secured in position by means of nails; they are composed of, preferably, clay or cement, or other materials to simulate stone or brick-work, and can be used for paving purposes.

2,822.—FIRE-PROOF CEILINGS: *F. Cohn & H. G. B. Brunckhorst.*—The ends of fire-proof blocks are stepped to rest upon strips or ribs of the joists or upon the lower flanges of iron girders, whilst their sides are grooved and tongued, cement or mortar is filled in the spaces below the joists and girders and supported by network or gratings; for moulding the blocks, are used boxes having angle-iron sides and locked ends, and a transverse partition is made movable by rack and pinion gear between the sides of the box so that the blocks may be moulded in different lengths.

2,896.—PORTLAND CEMENT: *E. H. Hurry & H. J. Seaman.*—A crusher or mixer delivers the cement-rock by a chute into the buckets of an elevator, whence the rock is fed by gravity to a pulveriser, and then to a bin which supplies a rotary roasting furnace mounted upon roller bearings, and projecting into a chamber fitted with an ash-pit and leading to a chimney stack; the cement, in the shape of slurry, may be pumped into the furnace wherein a burner, which injects high-pressure air and powdered fuel, roasts the material to clinker; a rotary inclined cylinder conveys the clinker to a reducing apparatus, where it is wetted; the material is next passed through a rotary cooling conduit (see Patent No. 23,145 of 1895), and the process is completed by the conveyance of the cooled clinker, by means of an elevator, to a bin which supplies a pulveriser.

2,955.—SAFETY APPLIANCE FOR LIFTS: *J. Stannah.*—A pipe connects the plunger to the ram cylinder, the plunger having an area greater than that of the supply port of the hydraulic slide valve; the pressure lifts the plunger clear of the slide valve, but in the event of injury to the main the pressure upon the plunger's outer end exceeds that upon its inner end, forcing it against the back of the slide valve which it thereupon locks.

2,963.—FIRE ESCAPE LADDERS: *W. J. Worth.*—The ladder sections are extended or retracted, and so held, by an arrangement of bell-crank stops to which is connected the rope which passes over pulleys at the ends of the sections in such a manner that, when the rope's free end is pulled, the stops become disconnected from the rungs upon which they act, and when the strain is relaxed the stops again engage, automatically with the rungs, under the action of spiral springs; the stops can also be controlled by a separate rope instead of by springs.

2,973.—CASTING PILE SHOES: *A. Harris.*—As an improvement upon the Patent No. 14,815, of 1884, the inventor casts the points of the shoes in a chill or mould about iron or steel bars, which are made to interlock with the cast metal by being bent inwards or being rounded, bevelled, or serrated; the dove-tailing may be effected also by inserting rivets through holes in the bars. During the operation of casting the bars are held in their places by clips upon standards of the moulds, or the clamping bars may be secured by screws in inclined slots in the mould.

2,993.—WATER WASTE PREVENTERS: *W. Tordoff.*—At the bottom of the cistern, which, under normal circumstances, is empty, is a valve suspended by rod, which has a slot through which the float-arm passes, the float-arm being connected by links to a rocking-shaft that carries a tumbler; when the chain is pulled the tumbler falls over, and so both closes the valve and lets the float-arm fall to open the inlet. As soon as the cistern is filled the rising float tilts the tumbler up again and so closes the inlet, and opens the valve for flush delivery; the rocking-shaft is connected to a tipping basin, whence leakage may be discharged into the overflow pipe beneath.

3,067.—REPAIR OF LIFT VALVES: *E. J. Barker.*—To facilitate repairs, a socket piece, screw-threaded to engage with the casing and having a handle, is connected to the valve, the lowering of the valve to connect the inlet and outlet causes a plug that rests upon the valve to fall too, then, if the valve and socket are taken out the plug descends to close the opening next above the valve.

3,107.—EMPTYING SERVICE PIPES: *H. S. Paige.*—The contrivance is for emptying service and supply pipes during frosty weather without discharging the water from the supply cisterns; at the entrance of the service pipe is a ball valve which a pull-chain attached to a lever within guide-rods normally raises out of action, whilst a weight upon the valve rod closes the valve on the chain's release; an inlet tube above the cistern admits air to the service pipe; a cut-off cock connected to a two-ways draw-off cock by toothed wheels is fitted to the supply pipe from the main, so that one cock is closed when the other is opened; to empty the supply pipe one should draw enough water from the cistern to slightly open the ball-cock and admit air into the pipe—if the device is used for a water-supply system wherein the service pipes are supplied directly from the main, the air enters the supply pipe through one of the service taps.

3,139.—MEASURES OF LENGTH: *C. J. M. Bonnefoi.*—In order to vary the relative motion so as to give correct readings for different scales of plans and maps, a roughened cone is placed on the face of the wheel carried by an arm concentrically with the pinion, as an addition to the gear which transmits the roller's movement to the index hand upon the spindle of the pinion; the cone bears against the wheel's rough edge, and the required velocity ratio is to be attained by changing the cone's position by means of a connecting rod, a screw, and a milled head, the scale at which the instrument works is indicated by a pointer that moves over a scale at the back.

3,145.—COMBINED SQUARE, RULER, AND PROTRACTOR: *J. A. Labat-Guilmant.*—The contrivance, for use on drawing-boards, comprises a double T-square, having two blades and two stocks, whereof one is normally pressed against a handle upon the other by a spring, the other stock is faced with metal plates, and the former stock with rubber nipples, one blade carries an adjustable block (also faced with rubber nipples) through which the other blade can slide; the instrument can be made to move up and down the board by pressing the stocks together, upon their release the rubber nipples grip the board's edge. To a sliding block upon the blades is pivotted another graduated blade, which is set to any desired angle by a link and a sliding block.

3,150.—SASH-FASTENINGS: *G. W. Westgarth.*—In a bracket on the lower sash is pivotted a lever having a slot and a balance weight at either end, the slotted end passing through one or other of the holes in a standard of the upper

sash and engaging with tapered cross-pieces, and the slot's face taking a vertical position when the parts become so engaged, the action of closing the sashes knocks back the weighted end of the bracket when it is in the disengaged (or turned-over) position, and so causes the sashes to become automatically fastened.

3,178.—SOLDERING APPARATUS: *M. Tomellini & G. Francia.*—Means are provided for cooling and drying the hydrogen in a generator of oxyhydrogen flame used in soldering aluminium, &c.; the zinc is laid on a grating in one vessel and the dilute sulphuric acid is introduced through a pipe leading from a vessel above; the generated hydrogen passes through a pipe and washing vessel, which condenses vapour produced by the heat of chemical action, when the latter pipe is closed (by a tap) the dilute acid is forced, by pressure of the hydrogen, below the zinc and arrests the action; the gas, dried and cooled, passes to a bronzed branch pipe, one branch being connected to the burner, and the other branch to the air-supply. The latter supply branches have taps for security's sake.

3,207.—ELECTRICAL ARC LAMPS: *S. Bergmann.*—In a guide tube moves a carbon holder, consisting of a split tube attached to a body and stem, wherein slides a block, the holder being guided within the tube by a ring of balls, which are placed between the block and the body and make electrical contact with the tube; pressure of the block against the balls may be obtained through its own weight or by means of a spring held by a cap screwed on to the stem.

SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.

May 23.—By EDWARD BOND (at Thame).

Brill, Bucks.—Stone Pits Field, 12 a., f. £500

May 24.—By J. MARGETTS & SONS (at Banbury).

Farnborough, &c., Warwick.—A freehold farm, 64 a. 2 r. 9 p. 1,575
Fenny Compton, Warwick.—Two freehold cottage tenements 170

By RICHARDSON & PEARCE-BROWN (at Goole).

Swinefleet, &c., Yorks.—Various enclosures, 75 a. 3 r. 26 p., f. 4,283
Enclosures, with cottage, &c., thereon, 28 a. 3 r. 6 p., f. 3,200

May 25.—By CHESTERTON & SONS.

Harringay.—Harringay-rd., twenty plots of building land, f. 1,810

By DYER, SON, & HILTON.

Forest Hill.—Lowther Hill, two plots of building land, f. 150
Brockley Pk., a plot of building land, f. 200
Blackheath.—8, Aberdeen-ter., u.t. 53 yrs., g.r. 16*l.* 520
Lee.—Eltham-rd., Pendennis, u.t. 61 yrs., g.r. 18*l.*, e.r. 80*l.* 380

By H. J. BLISS & SONS.

Bethnal Green.—16 and 18, Wennington-rd., u.t. 58 yrs., g.r. 5*l.* 610
17 and 19, Ashwell-rd., u.t. 58 yrs., g.r. 6*l.* 6s. ... 580
Mile End.—39 and 43, Bloomfield-rd., also l.g.r. 10*l.*, u.t. 67 yrs., g.r. 20*l.* 575
Bethnal Green.—2, 4, and 6, Ames-st., f. 1,885
Leytonstone.—17, 19, and 21, Acacia-rd., f. 730
St. George's East.—43 to 51 (odd), Berner-st., u.t. 16 yrs., g.r. 15*l.* 15s. 705
Plaistow.—209 to 215 (odd), Becton-rd., f. 1,050

By G. F. HARRINGTON.

Finchley.—15, Alexandra-grove, f., e.r. 65*l.* 850

By J. & R. KEMP & Co.

Camden Town.—219, Camden-rd., u.t. 36¾ yrs., g.r. 10*l.* 610

By NEWBON, EDWARDS, & SHEPHARD.

Crouch End.—68, Palace-rd., u.t. 78½ yrs., g.r. 10*l.*, r. 42*l.* 420
5 and 7, Palace-rd., u.t. 78½ yrs., g.r. 16*l.*, r. 80*l.* 740
1, 5, 11, 13, 17, and 19, Topsfield-rd., u.t. 78½ yrs., g.r. 36*l.*, r. 170*l.* 1,685
15, Lynton-rd., u.t. 78½ yrs., g.r. 6*l.*, r. 30*l.* 280
44, Weston Pk., u.t. 82½ yrs., g.r. 10*l.*, e.r. 55*l.* 500
Canonbury.—20 and 21, Sebbon-st., u.t. 20 yrs., g.r. 10*l.*, r. 60*l.* 300
Stoke Newington.—108, Cazenove-rd., u.t. 77½ yrs., g.r. 13*l.*, e.r. 80*l.* 900
City-rd.—27, Westmoreland-pl., f., r. 36*l.* 500
Clerkenwell.—36½, White Horse-alley, f. 175
Hornsey.—15, 17, 19, and 31, Lightfoot-rd., f., r. 130*l.* 1,685
Lightfoot-rd., f.g.r. 6*l.* 10s., reversion in 99 yrs. 170

By STIMSON & SONS.

Vauxhall.—Upper Kennington-lane, c.g.r. 120*l.*, reversion in 18½ yrs. 3,700
Upper Kennington-lane, c.g.r. 45*l.* 4s., reversion in 6½ yrs. 3,735
Harleyford-rd., c.g.r. 33*l.*, reversion in 6½ yrs... 3,700
Camberwell.—Picton-st., f.g.r. 15*l.*, reversion in 73 yrs. 405
11, 13, and 15, Brisbane-st., f. 980
21 and 23, Waterloo-st., f., r. 92*l.* 1,325
1a, 2a, and 3a, Guildford-pl., f. 850
Newington Butts.—F.g.r. 80*l.*, reversion in 43 yrs. 2,575
Canning Town.—Blanche-st., f.g.r.'s 39*l.* 10s., reversion in 76 yrs. 880
South Lambeth.—Hartington-rd., f.g.r. 27*l.* 10s., reversion in 60 yrs. 845
Southwark.—2 to 5, Mansfield-st., with timber-yard in rear, u.t. 1½ yrs., g.r. 20*l.* 105

By J. A. & W. THARP.

Clapton.—26, Clapton-sq., f., r. 100*l.* 3,050
Edmonton.—41, Snell's Park, f., e.r. 42*l.* 700

By C. C. & T. MOORE.

St. George's East.—72 to 82 (even), Grove-st., 36 to 46 (even), Christian-st., f. 6,600
48 and 50, Christian-st., f. 820
1 to 4, Matilda-pl., f. 790
1 to 4, Matilda-st., f. 1,070
54 and 56, Christian-st., f. 795
58, 60, and 62, Christian-st., f. 3,620
66, Christian-st., and 24 and 26, Fairclough-st., f., r. 87*l.* 1,500
28 and 30, Fairclough-st., f. 800
41 to 63 (odd), Christian-st., f. 6,870
65, 65a, 65b, 67, 69, 69a, Christian-st.; 24, Fairclough-st.; and 31, 32, and 33, Brunswick-st., area 6,400 ft., f. 6,000
19 to 30, Brunswick-st., f. 4,370
75, 77, and 79, Ellen-st., f. 1,105

By CHARLES HAWKINS (at Stoke Ferry).

Stoke Ferry, &c., Norfolk.—A freehold farm, 53 a. 3 r. 16 p. 1,525
Methwold, Norfolk.—The Mundford Field, 97 a. 2 r. 38 p., f. £600
The Swan Closes, 11 a. 3 r. 30 p., f. 400

By J. J. HILL & WEAVER (at Masons' Hall Tavern).

Tottenham Court-rd.—No. 101, "The Bull's Head" p.-h. (Tottenham Distillery), u.t. 80½ yrs., r. 310*l.*, with goodwill 48,000
Haverstock Hill.—England's-lane "The Washington Hotel," u.t. 62½ yrs., r. 100*l.*, with goodwill 25,700

By SLEE, SON, & CARDEN (at Masons' Hall Tavern).

Enfield.—The Town, "Ye Olde Pente House" p.-h., u.t. 38 yrs., r. 100*l.*, with goodwill 650

By BAXTER, PAYNE, & LEPPER (at Bromley).

Downe, Kent.—Four freehold Cottages, r. 36*l.* 14s. 400

By GEORGE TURNER (at Ipswich).

Ipswich.—Felaw-st., The Old Workhouse, area 3 a. 1 r. 38 p., f. 8,200

By WHITE & SONS (at Dorking).

Westcott, Surrey.—Hill House and 2 a. 0 r. 32 p., f. 2,250
An enclosure of land, 0 a. 3 r. 36 p., f. 260
Five freehold cottages 620

May 26.—By FURBER, PRICE, & FURBER.

St. Albans, Herts.—Watford-rd., St. Stephen's House and 1 a. 2 r. 20 p., r. 75*l.* 2,250
Clapham.—19, Cavendish-rd., u.t. 85½ yrs., g.r. 12*l.* 580

By PROTHEROE & MORRIS.

Leyton.—Grange-rd., a block of building land, f. 300
Shaftesbury-rd., a block of building land, f. 140
Stondon Massey, Essex.—Stock's Cottages and 10 a. 0 r. 16 p., f. 540

By RIDER & SONS.

Notting Hill.—64 and 66, Walmer-rd., and 2, Silchester-mews, u.t. 64 yrs., g.r. 22*l.* 2s. 6d..... 715
50, Golborne-rd., u.t. 67 yrs., g.r. 10*l.*, e.r. 50*l.*, with goodwill 400
Shepherd's Bush.—19, Caxton-rd., f., r. 28*l.* 415

By DOWSETT, KNIGHT, & Co.

Notting Hill.—91, Clarendon-rd., u.t. 40 yrs., g.r. 10*l.*, e.r. 55*l.* 355

By WALTER HALL.

Canning Town. — Victoria Dock-rd., "The Windsor Castle" p.-h, f.g.r. 110*l.*, reversion in 95¼ yrs. 2,635
Clapham.—12, Mayflower-rd., u.t. 83 yrs., g.r. 10*l.*, r. 50*l.* 500
29, Severns-rd., u.t. 85 yrs., g.r. 8*l.* 8s., r. 42*l.*.. 460

By G. A. WILKINSON & SON.

City of London.—120 to 123, Fenchurch-st., and 8, Billiter-sq., area 8,200 ft., let on building lease for 80 yrs., at per annum 2,200

By BAKER & SONS.

Harrow, Middx.—Peterborough-rd., The Harrow Cycle Depot, f., r. 90*l.* 1,330
1 to 5, Cambridge-villas, r. 110*l.*; Wellington-rd., Brightview, Waterloo Villa, and Aston Villa, r. 85*l.* 16s., f. 1,190
1, 2, and 3, Jubilee-ter., u.t. 97 yrs., g.r. 7*l.* 10s., r. 115*l.* 1,320
4, 5, and 6, Jubilee-ter., u.t. 97 yrs., g.r. 6*l.* 805
1 to 6, Queen's-ter., u.t. 97 yrs., g.r. 10*l.* 10s. .. 1,555
1 to 4, Canning-villas, f. 2,000

May 27.—By BRUTON, KNOWLES & Co. (at Gloucester).

Upleaden, Glos.—Bayton's Farm, 72 a. 2 r. 29 p., f. 1,600
A freehold holding, 3 a. 2 r. 27 p. 350

By WINCH & SONS (at Hawkhurst).

Sandhurst, Kent.—Enclosure of Marsh land, 23 a. 2 r. 19 p., f. 640
Lomas Farm, 108 a. 3 r. 22 p., f. 2,500
A freehold messuage and an orchard, 0 a. 3 r. 2 p. 185
Hope House Farm, 106 a. 0 r. 15 p., f. 1,600
The Mill Brooks and Heel Fields, 16 a. 3 r. 24 p., f. 300
Hoadland and Reynold's Farm, 167 a. 1 r. 11 p., f. 2,375

May 29.—By DURRANT & LAMPERD.

Bromley, Kent.—36 and 37, Palace-rd., f., r. 45*l.*.. 870
East Finchley.—King-st., a freehold building site 280
Rotherhithe.—674 and 678, Rotherhithe-st., f., r. 44*l.* 575
Lee.—10, Bromley-rd., u.t. 65 yrs., g.r. 7*l.* 10s., r. 35*l.* 300
Forest Hill.—4, Rockbourne-rd., u.t. 62 yrs., g.r. 6*l.* 6s., r. 26*l.* 225
Bromley, Kent.—Park-rd., f.g.r.'s 19*l.* 10s., reversion in 61 yrs. 535
Widmore-rd., f.g.r.'s 23*l.*, reversion in 61 yrs. .. 640
Peckham.—Kirkwood-rd., f.g.r.'s 8*l.* 8s., reversion in 74 yrs. 205

By H. J. BROMLEY.

Forest Hill.—28, Rockbourne-rd., u.t. 61 yrs., g.r. 6*l.* 10s. 280

By ELLIOTT, SON, & BOYTON.

Hampstead.—80 and 82, Goldhurst-ter., u.t. 79 yrs., g.r. 24*l.*, r. 120*l.* 1,075
Kentish Town.—Malden-rd., "The Newbury Arms" p.-h., i.g.r 84*l.*, u.t. 41½ yrs., g.r. 12*l.* 1,410
Stoke Newington.—Nevill-rd., i.g.r. 40*l.*, u.t. 65 yrs., g.r. 10*l.* 620

By MARK GILBERT.

Enfield Highway.—Turkey-st., the Grove House Estate, 10 a., f. 4,000
Canning Town.—18, 20, and 22, Blanche-st., u.t. 76 yrs., g.r. 9*l.* 300

By LEOPOLD FARMER.

Hampstead.—1 to 6 and 8 to 11, Smyrna-rd., u.t. 81 yrs., g.r. 65*l.*, r. 378*l.* 3,700
Kilburn.—12, Cambridge-gardens, u.t. 60 yrs., g.r. 12*l.* 10s., e.r. 65*l.* 700
Regent's Pk.—55, Park-rd., u.t. 10 yrs., g.r. nil, r. 60*l.* 265

By F. WARMAN.

Highbury.—10, Highbury New Pk., u.t. 50 yrs., g.r. 15*l.*, r. 80*l.* 1,050
67, Highbury New Pk., u.t. 10 yrs., g.r. 15*l.*, e.r. 100*l.* 825
Finsbury Pk.—86, Queen's-rd., u.t. 76 yrs., g.r. 10*l.* 10s. 1,075
Crouch Hill.—23, Mount Pleasant-villas, u.t. 76 yrs., g.r. 10*l.* 10s., r. 52*l.* 10s. 650
Regent's Pk. — 126, Albany-st., u.t. 24 yrs., g.r. 9*l.* 10s., e.r. 70*l.* 500
77, Little Albany-st., u.t. 24 yrs., g.r. 2*l.* 10s., r. 26*l.* 130
Barnsbury.—102, Richmond-rd., u.t. 7 yrs., g.r. 1*l.* 3s. 4d., e.r. 45*l.* £140

By REYNOLDS & EASON.

St. Pancras.—43, Cardington-st., an improved rental of 149*l.*, u.t. 19 yrs. 2,350
Bloomsbury.—118, Gower-st., an improved rental of 70*l.*, u.t. 15 yrs. 760
Stoke Newington.—28, 30, and 32, Londesborough-rd., u.t. 64 yrs., g.r. 12*l.*, r. 78*l.* 890
St. George's East.—202 and 210, St. George-st., f. 800
Stepney.—20 and 22, Elsa-st., f. 475
Poplar.—1 to 4, Caledonia-ter., f. 940
56, Cotton-st., f., r. 42*l.* 450
1 and 2, Woolmore-st., f. 555
Bromley-by-Bow.—64 to 72 (even), Brabazon-st., f. 1,160

By WOOTTON & GREEN.

Notting Hill.—47 to 57 (odd), Latimer-rd., f., r. 258*l.* 10s. 2,700
59, Latimer-rd., f., r. 50*l.* 600
272, Latimer-rd., f., r. 55*l.* 8s. 600
266 and 268, Latimer-rd., u.t. 64 yrs., g.r. 9*l.* 18s. 4d., r. 71*l.* 510
Latimer-rd., "The British Volunteer" b.-h., also 1 and 3, Park-st., u.t. 66 yrs., g.r. 70*l.* .. 925
Shepherd's Bush.—21 and 23, Tadmor-st., f., r. 60*l.* 900
96, 98, and 100, Devonport-rd., f. 1,595
118 and 120, St. Stephen's-av., f. r. 72*l.* 1,050
Wimbledon.—De Burgh-rd., two building plots, f. 140
Gunnersbury.—Thorney Hedge-rd., a plot of land, f. 185

By WILKINSON, SON, & WELCH (at Brighton).

Hove, Sussex.—Hove Lodge Mansions, f.g.r. 120*l.*, reversion in 97 yrs. 3,325

By W. LUDLOW & BRISCOE (at Birmingham).

Northfield, Worcester.—West Heath-rd., Broom Hill and 0 a. 2 r. 28 p., u.t. 96 yrs., g.r. 10*l.* .. 1,000
Knowle, Warwick.—Darley Mill Farm, 18 a. 3 r. 7 p., f. 1,800

May 30.—By P. and G. GEEN.

Wood Green.—Blenheim-rd., &c., f.g.r. 44*l.*, reversion in 81 yrs. 780
Notting Hill.—44, 66, and 68, Portland-rd., u.t. 50 yrs., g.r. 26*l.*, r. 140*l.* 1,165
Wood Green.—16, Truro-rd., u.t. 78 yrs., g.r. 17*l.* 7s. 540
Lambeth.—3, Lambeth Palace-rd., u.t. 14½ yrs., g.r. &c., 23*l.* 19s. 270

By DEBENHAM, TEWSON, & Co.

Hornsey.—Middle-lane, f.g.r.'s 25*l.* 10s., reversion in 80 yrs. 690
Holloway.—Tufnell Park-rd., i.g.r.'s 26*l.*, u.t. 65 yrs., g.r. 5*l.* 460
Blackfriars.—13, Aquinas-st., area 5,500 ft., u.t. 9½ yrs., g.r. 33*l.* 12s., r. 120*l.* 500

By J. HORATIO HIBBARD.

Hackney.—2 and 5, St. Mark's-ter., u.t. 67 yrs., g.r. 12*l.* 10s. 775

By F. JOLLY & Co.

Stoke Newington.—47, Milton-rd., u.t. 53 yrs., g.r. 4*l.* 270

By WALTER SIMMONDS.

Camberwell.—92A, 94, to 108 (even), Westmacott-st., f. 2,260
35 to 45 (odd), Waterloo-st., f. 1,260

By A. H. TURNER & Co.

Piccadilly.—2, Albemarle-st., f., r. 1,000*l.* 16,070

By VENTOM, BULL, & COOPER.

City of London.—52, Bread-st., u.t. 68 yrs., g.r. 355*l.*, e.r. 1,115*l.* 7,000
Camberwell.—3, 4, 5, and 6, Camberwell Green, f. 5,000

By ST. QUINTIN & SON.

Regent-st.—Nos. 210 and 210A, also 48, King-st., u.t. 20 yrs., g.r., &c., 119*l.*, r. 1,670*l.* 20,000

By ELLIS, MORRIS & Co.

Holloway.—1 to 4, Cottenham-ter., u.t. 67 yrs., g.r. 24*l.* 880
Acton.—77, Park-rd., f. 235
39 and 41, Stanley-rd., f. 460
Turnham Green.—17 and 19, Bollo-lane, f. 680

By HARMAN BROS.

Stoke Newington.—37, Lordship Pk., u.t. 74½ yrs., g.r. 10*l.* 10s., r. 65*l.* 1,045
46, Fountayne-rd., u.t. 77½ yrs., g.r. 9*l.* 10s., r. 48*l.* 665
Limehouse.—Grenade-st., &c., a corner building site, with building thereon, area 4,088 ft., c., r. 60*l.* 875
Clapton.—1, Charnock-rd., u.t. 82 yrs., g.r. 9*l.*, r. 38*l.* 350

By C. C. TAYLOR & SON.

Bromley-by-Bow.—2 to 30 (even), Tibbatt's-rd., u.t. 63 yrs., g.r. 42*l.* 18s. 2,575
Hoxton.—1 to 5 and 13 to 17, Hutley-pl., u.t. 19 yrs., g.r. 25*l.* 675

By ALFRED RICHARDS.

Rayleigh, Essex.—The Rayleigh Gas Works, f. (as a going concern) 1,270

By ORGILL, MARKS, & ORGILL (at Masons' Hall Tavern).

Chalvey, Bucks.—"The Garibaldi" b.-h., f., r. 45*l.* 2,150
372, Sussex-pl., f. 325
1, 2, and 3, Garibaldi-cottages, f. 430

By WHETHERLY & HASLETT (at Masons' Hall Tavern).

Stoke Newington.—Newington Green-rd., "The Edinburgh" p.-h., and shop adjoining, u.t. 43 yrs., r. 150*l.*, with goodwill 15,500
Oxford-st.—Well-st., "The Champion" p.-h., u.t. 45 yrs., r. 130*l.*, with goodwill 10,500

By A. ROBERTSON (at Camberwell).

Walworth.—194, Hillingdon-st., f. 315
Dulwich.—38, Wood-vale, u.t. 76 yrs., g.r. 6*l.*, e.r. 34*l.* 315

By STEPHENSON & ALEXANDER (at Cardiff).

Cardiff, Glamorgan.—172, Newport-rd., u.t. 73 yrs., g.r. 5*l.* 10s. 625
139 and 139½, Bute-st., u.t. 50 yrs., g.r. 6*l.* 7s. 6d., r. 120*l.* 1,100
Penarth, Glamorgan.—Upper Cliff, u.t. 54 yrs., g.r. 10*l.*, r. 100*l.* 1,525

By EDWARD BOND (at Thame).

Haddenham, Bucks.—A copyhold residence and 2 a. 610
Garfield House, also a cottage, f. and c. 405
Home Field, 24 a. 1 r. 13 p., f. and c. 1,060

By ALFRED RICHARDS (at Enfield).

Enfield.—Birkbeck-rd., a block of building land, f. 260
Hawthorne-grove, two blocks of building land, f. 350

By R. DALTON & SON (at Carlisle).

Carlisle.—56, 58, and 60, Castle-st., area 410 yds., f. 3,300

COMPETITIONS, CONTRACTS, AND PUBLIC APPOINTMENTS.

COMPETITIONS.

Nature of Work.	By whom Advertised.	Premiums.	Designs to be delivered
*Isolation Hospital	Wharfedale Union Hos. Com.	30*l.* and 15*l.*	Sept. 1

CONTRACTS.

Nature of Work or Materials.	By whom Required.	Forms of Tender, &c. Supplied by	Tenders to be delivered.
Two Shops and House, Denbigh-st. Llanrwst	W. J. Williams	P. McIntyre, Archt. The Square, Llanrwst	June 13
*Brick and Concrete Sewer	Lewisham B. of W.	Surv. Dept. Town Hall, Catford, S.E.	do.
*Kerbing, Tar Paving, &c.	do.	do.	do.
*Granite Spalls and Broken Granite	Hackney Vestry	J. Lovegrove, Vestry Hall	June 14
*Portland Cement	Hove Corp.	Surveyor, Town Hall	do.
*Timber Diving Platform and Two Rafts	L.C.C.	Parks' Dept. 9, Spring-gardens, S.W.	do.
Laundry Buildings, Blackhill, co. Durham	N. W. Durham Steam Laundry Co.	G. T. Wilson, Archt. 121, Durham-rd. Blackhill	do
Granite Setts (650 tons)	Rochdale Corp.	J. Leach, Town Hall	do.
Sewers	do.	S. S. Platt, C.E. Town Hall	do.
*Flints	Kingston-on-Thames Corp.	Boro Surv. Clattern House, Kingston-on-Thames	June 15
*Council Offices and Fire Station	Sutton (Surrey) U.D.C	C. C. Smith, Public Offices, Sutton, Surrey	do.
*Galvanised Iron Dust Pails (2,000)	Bethnal Green Vestry	F. W. Farratt, Vestry Hall, Church-row, Bethnal Green	do.
Laying 6½ miles Cast Iron Pipes, Rowberrow	Axbridge R.D.C.	A. Powell, C.E. 3, Unity-st. College Green, Bristol	do.
Three Cottages, Toft Monks	Trustees	A. Pells, Archt. Beccles	do.
Additions to Workhouse	Amesbury (Wilts) Union	J. Harding & Son, Archt. Salisbury	do.
Rebuilding Tower of Cathedral, Killaloe, Ireland		J. F. Fuller, Archt. Brunswick-chmbrs. Dublin	do.
Additions to The Beeches, Faygate, Sussex		W. Buck, Archt. Horsham	do.
Offices	Ashburton Sch. Bd.	H. M. Firth, Ashburton	do.
Store Buildings, Otley-road	Bradford Provident Indus. Soc. Ltd.	Rycroft & Firth, Archt. Bank-bldgs. Manchester-road, Bradford	do.
Surveyor's Materials	Gillingham (Kent) U.D.C.	F. C. Boucher, Gardiner-st. New Brompton	do.
Street Works, Devonshire-st. &c.	Birmingham Corp.	J. Price, City Engr. Council House	do.
Additions to Shippon, &c. Scholefield, Nelson	E. Carr	H. Holgate, Archt. Market-st. Colne	do.
Additions to Asylum, Wadsley	West Riding C.C.	Clerk of Works, The Asylum, Wadsley, Sheffield	do.
Destructor Buildings	Belfast Corp.	City Surveyor, Belfast	do.
*Concrete Dam, &c. and Road Raising	N. Wales Counties Asylum	J. T. Wood, C.E. 3, Cook-st. Liverpool	do.
*Shed, Derby	Midland Railway	Co.'s Archt. Cavendish House, Derby	do.
*Laundry Apparatus and Machinery	Wandsworth & Clapham Union	T. W. Aldwinckle, 1, Victoria-st. S.W.	do.
Museum, Rossall School, Fleetwood, Lancs.		Wright & Son, Surv. Lancaster	June 16
Sewerage Works, Carlton	Barnsley R.D.C.	W. J. Lomax, Engr. 11, Fold-st. Bolton	do
Alterations to House, Church-road, Harrington	J. B. Little	W. G. Scott & Co. Archt. Victoria-bldgs. Workington	June 17
Schools, Loy Houses, Cookstown	M. & E. J. Houston	J. M. Robinson, Cookstown, Ireland	do.
Hospital, Carnarvon	Building Committee	R. L. Jones, Archt. Market-st. Carnarvon	do.
Alterations, Carmel Chapel, Treherbert		J. Rees, Archt. Pentre, R.S.O. Glam.	do.
Additions to Corn Exchange	Loughborough Corp.	A. H. Walker, C.E. Town Offices, Loughborough	June 19
Additions to Cottages, Durnsford-rd.	Wimbledon U.D.C.	C. H. Cooper, C.E. Broadway, Wimbledon	do.
Two Cottages, Halwell, Devon		W. F. Tollit, Archt. Gate House, Totnes	do.
Road Works	Tunbridge Wells Corp.	W. C. Cripps, Town Hall	do.
Coastguard Houses, &c. Mullion, Cornwall		J. Roberts, Mullion	do.
Cast Iron Pipes (815 tons)	Belfast Water Commissioners	L. L. Macassey, C.E. Belfast	do.
Additions to Schools, Dyfatty	Swansea Sch. Bd.	A. W. Halden, Dynevor-place, Swansea	do.
Bridge	Wallasey U.D.C.	H. W. Cook, Public Offices, Eremont, Cheshire	do.
Street Works, Riverdale-road	Erith U.D.C.	F. Parish, High-st. Erith	do.
Road Works, Griffin-street	Wolverhampton Corp.	J. W. Bradley, C.E. Town Hall	do.
Surveyor's Materials	Market Bosworth R.D.C.	W. Thorpe, Surv. Nailstone, Nuneaton	do.
*Fifty-three Cottages and Five Blocks of Tenements	Tunbridge Wells Corp.	Borough Surveyor	do.
*Sewering and Making-up Roads	do.	do.	do.
*Institute, Swimming Baths, Laundry, &c.	Beckenham U.D.C.	Council Offices	do.
*Fog Signal House, Dwellings, &c.	Trinity House Corp.	E. G. Verity, 31, Golden-sq. W.	do.
*Wood Paving Blocks	Bermondsey Vestry	F. Sumner, Town Hall	do.
Alterations to Schools, Albert-road	Penarth Sch. Bd.	Seddon & Carter, Archt. Bank-bldgs. Cardiff	June 20

CONTRACTS—*Continued.*

Nature of Work or Materials.	By whom Required.	Forms of Tender, &c. Supplied by	Tenders to be delivered.
Eleven Houses, Ovenden Wood, Halifax	S. Webster & Son, Ltd.	Jackson & Fox, Archt. Halifax	June 20
Sewers, Grassendale, Lancs.	Garstang U.D.C.	F. W. Bowden, C.E. Public Offices, Grassendale	do.
Kerbing, Upper Greetland	Halifax R.D.C.	T. Gordon, Surv. Clifton, Brighouse	do.
*Providing and Laying Urinals	Tottenham U.D.C.	P. E. Murphy, 712, High-rd. Tottenham	do.
*Work in Erection of Hospital, also Heating, &c. Apparatus	Sheffield Corp.	Flockton, Gibbs, & Flockton, 15, St. James-row, Sheffield	do.
*Laying York Paving	Tottenham U.D.C	P. E. Murphy, 712, High-rd. Tottenham	do.
*Hospital	Basingstoke U.D.C.	J. Gibson, 3, New-st. Basingstoke	June 21
Houses, Bridlington Quay	T. H. Harris	S. Dyer, Archt. Bridlington Quay	do.
Additions to Workhouse	Hemsworth (Yorks) Union	T. H. Richardson, Archt. Hemsworth	do
Granite (600 tons)	Braintree U.D.C.	H. H. Nankivell, Surv. Waterworks, Braintree	do.
*Fire Escape Staircases	St. Pancras Guardians	Browett & Taylor, 9, Warwick-ct. Holborn, W.C.	June 22
Granite Setts	Grays (Essex) U.D.C.	A. C. James, Surv. High-st. Grays	do
Alterations to Police Buildings, Polmadie	Glasgow Corp.	J. Lindsay, City Chambers, Glasgow	do
Church, Lostwithiel, Cornwall		S. Hill, Archt. Green-in. Redruth	do.
Four Houses, Kelvedon, Essex		Chancellor & Son, Archt. Chelmsford	June 23
Stabling, &c. Square-rd. Halifax		J. F. Walsh, Archt. L & Y. Bank-chambers, Halifax	do
Paving Flags	Tewkesbury Corp.	W. Ridler, Boro. Surv. Tewkesbury	June 24
Street Works, Clyde-rd. &c.	Withington (Lancs.) U.D.C.	A. H. Mountain, C.E. Town Hall	do
Schools, Blaina, Mon.	Trustees	W. S. James, 77, High-st. Blaina	June 25
Bridge Repairs	Alnwick R.D.C.	J. Short, Surv. Alnwick	June 26
Reservoir, Snablesazes	do.	H. W. Walton, Alnwick	do.
Schools, Cwm	Aberystwyth Sch. Bd	R. L. Roberts, Archt. Victoria-chmbrs. Abercarn	do.
Boiler House, &c.	Edinburgh Corp.	Borough Engineer, 1, Parliament-sq. Edinburgh	do
Houses, Bundoran & Belleek, Ireland	G. N. Ry. Co.	T. Morrison, Amiens-st. Terminus, Dublin	June 27
*Granite	N. Walsham U.D.C.	Surv. Council Offices	June 28
Granite (200 tons)	Bournemouth U.D.C.	W. T. Streather, Surv. Winton, Bournemouth	do.
Villa, Greenroyd Estate, Halifax		M. Hall, Archt. 29, Northgate, Halifax	do.
*Works at Relief Offices	Islington Guardians	W. Smith, 65, Chancery-lane, W.C.	June 29
Well Sinking	North Walsham (Norfolk) U.D.C.	J. C. Mellins, C.E. 264, Gresham House, Old Broad-st. E.C.	do.
*Underground Convenience	Brighton Corp.	F. J. C. May, Town Hall	June 30
*Post Office, Chatham	Commrs. H.M. Works	Office, Storey's Gate, S.W.	do.
*Cleansing, Repairs, Painting, of 14 Schools	West Ham Sch. Bd.	W. Jaques, 2, Fen-court, E.C.	July 4
*Workhouse	Stamford Union	J. H. Horton, 50, King-st. South Shields	July 17
*Medical Schools at College, Liverpool	University College Liverpool	A. Waterhouse & Son, 20, New Cavendish-st. W.	No date
Residence, South Croydon		W. Towell, Archt. 21, Buckingham-st. W.C.	do.
Offices, Mount Stuart-sq. Cardiff		H. T. Thornley, Archt. 100, St. Mary-st. Cardiff	do.
Three Cottages, Willesden		T. F. Shore, Archt. 60, Nicoll-rd. Harlesden, N.W.	do.
Alterations to Premises, Wade-st. &c. Leeds	O'Hara & Co.	J. E. Preston, Archt. Chapel Allerton, Leeds	do.
Additions to Store Buildings, East Kirkby		L. Bright, Archt. 9, St. Peter's Church Walk, Nottingham	do.
House at National Schools, Harrietsham, Kent		H. Bensted, Archt. Maidstone	do.
Water Works	Perth C.C.	Thomson & Wright, C.E 22, Rutland-sq. Edinburgh	do
Residence, Compton Parochial Hall, Shawford	Compton Parish Council	Colson & Co. Archt. 45, Jewry-st. Winchester	do
Four Houses, Wakefield-rd. Bradford		J. Young & Co. Archt. 62, Market-st. Bradford	do.
Additions to 104-106, Holton-rd. Barry Dock	D. L. Evans & Co.	D. E. Knapman, Archt. Barry Dock, Glam.	do
House, Trebanog, nr. Porth		Veall & Sant Arcnt Cardiff	do
Tenements, High-st. Dunbar		Swanston & Legge, Archt. Kirkcaldy, N.B.	do
*Extension of Laundry	Farnboro Laundry Co.	W. E. Trevena, Ridgemount, Southampton-st. Farnboro, Hants	do.

PUBLIC APPOINTMENTS.

Nature of Appointment.	By whom Advertised.	Salary.	Application to be in.
*Clerk of Works	South Shields S.B.	3*l.* per week	June 13
*Clerks of Works (2)	Beckenham U.D.C.	4*l.* 4*s.* & 3*l.* 13*s.* 6*d.* per week	June 19
*Surveyor	Bermondsey Vestry	300*l.* per annum, residence, coal, gas, &c.	June 21

Those marked with an asterisk (*) are advertised in this Number. Competitions, p. iv. *Contracts, pp.* iv. vi. viii. x. & xxi. *Public Appointments, pp.* xviii. & xxi.

May 31.—By BELCHER, ADKIN, & BELCHER (at Wantage).

Wantage, Berks.—Station-rd., five building plots	£258
An enclosure of land, 7 a. 2 r. 30 p., f.	275
Truelocks and 4 a. 2 r. 33 p., f.	360
Barnards and 52 a., f.	1,975
Clement's and Fuller's homesteads, 5 a. 1 r. 20 p., f.	415
Eight freehold cottages	345
Various enclosures of land, 233 a. 0 r. 17 p., f.	2,235

By HEPPER & SONS (at Harrogate).

Harrogate, Yorks.—Regent Parade, The Bilton House Estate, 2 a. 0 r. 12 p., f.	5,000

By H. LUKE & SON (at Bridport).

Marshwood, Dorset. — Hackeridge and Batts Farms, 190 a. 2 r. 5 p., f.	3,300

By REEVE & FINN (at Hastings).

Brede, &c., Sussex.—Purster and Hole Farms, 153 a. 1 r. 32 p., f.	2,000

June 1.—By HAMILTON & MIALL.

Canning Town.—145 to 155 (odd), North Woolwich-rd., f.	1,150
Rotherhithe.—568 to 580 (even) Rotherhithe-st., f.	1,300

By H. S. HAWLEY & Co.

Bethnal Green.—4, 6, and 8, Selby-st., f.	840

By J. HOOD & SONS.

Stepney.—2 and 10, Belgrave-st., u.t. 9 yrs., g.r. nil	250
Shadwell.—20 and 22, New Gravel lane, f.	£345
84, Wapping Wall, f.	355
Commercial-rd. East.—25, 27, and 29, Morris-st., f.	900

By HOLCOMBE, BETTS, & WEST.

St. John's Wood.—36 and 38, Loudoun-rd., u.t. 38 yrs., g.r. 20*l.*, r. 120*l.*	1,110
Stratford.—165, Leyton High-rd., u.t. 80 yrs., g.r. 5*l.*	200
Shepherd's Bush.—18, Frithville-gardens, u.t. 84½ yrs., g.r. 8*l.*, r. 40*l.*	415

By G. F. FRANCIS.

Chelsea.—3, Cheyne-row, f., r. 21*l.*	380

By C. C. & T. MOORE.

Mile End.—468A, Mile End-rd., f. and c., e.r. 45*l.*	710
Sampson's-place, a building site, area 2,215 ft., f.	450
Bow.—9, Avenue-rd., u.t. 33 yrs., g.r. 3*l.* 10*s.*	400
125 and 127, St. Stephen's-rd., f.	620
Clapton.—25 to 31 (odd), Carlton-rd., f.	830
Homerton.—1 to 4, Hockley-st., f.	790
Bromley.—14a and 16a, Three Mills-lane, and 1a, 1 and 3, Imperial-st., u.t. 65½ yrs., g.r. 10*l.*	550
5 to 27 (odd), Imperial-st., u.t. 65½ yrs., g.r. 30*l.*	1,440

By NEWBON, EDWARDS, & SHEPHERD.

Dalston.—21 to 29 (odd), 32 to 46 (even), Graham-rd., u.t. 53 yrs., g.r. 71*l.* 10*s.*, r. 491*l.* (in lots)	5,995
Highbury.—34, Highbury-hill, u.t. 53 yrs., g.r. 17*l.* 10*s.*, r. 55*l.*	435
Camden Town.—2, Arlington-ter., u.t. 48 yrs., g.r. 7*l.*, e.r. 46*l.*	£415
Finchley.—1, Torrington-pl., f., r. 55*l.*	555

By STIMSON & SONS.

Highgate.—Hornsey-lane, Castlemere and Ivanhoe, f., r. 260*l.*	3,750
69, Whitehall Park, f., r. 60*l.*	1,150
Crouch End.—52, Weston-pk., u.t. 82½ yrs., g.r. 10*l.*, r. 50*l.*	520
19, 21, 23, and 27, Ella-rd., u.t. 82½ yrs., g.r. 31*l.* 1*s.*, r. 185*l.*	2,045
Tooting.—21, 22, and 23, Mandrake-rd., f.	1,005
Stamford Hill.—14, Amhurst-pk., u.t. 66 yrs., g.r. 18*l.*, e.r. 150*l.*	1,650
Forest Gate.—17, Sebert-rd., f., r. 30*l.*	505
Old Kent-rd.—80, 82, and 84, Trafalgar-rd., u.t. 33 yrs., g.r. 6*l.*	970
Dulwich.—28 to 62 (even), Landells-rd., u.t. 78½ yrs., g.r. 81*l.*	3,250

Contractions used in these lists.—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; e.r. for estimated rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; yd. for yard, &c.

TO CORRESPONDENTS.

A. H.—J. B. R. (Amounts should have been stated). A. E. K. (Sent too late).

NOTE.—The responsibility of signed articles, letters, and papers read at public meetings, rests, of course, with the authors.

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All communications regarding literary and artistic matters should be addressed to THE EDITOR; those relating to advertisements and other exclusively business matters should be addressed to THE PUBLISHER, and *not* to the Editor

TENDERS.

[Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than* 10 *a.m. on Thursdays.* N.B.—We cannot publish Tenders unless authenticated by the name and address of the sender; and we cannot publish announcements of Tenders accepted unless the amount of the Tender is given, nor any list in which the lowest Tender is under £100, unless in some exceptional cases and for special reasons.]

* Denotes *accepted.* † Denotes *provisionally accepted.*

ABERYSTWITH.—For the erection of twenty workmen's houses, for the Town Council. Mr. Rees Jones, Borough Surveyor, Corporation Offices, Aberystwith. Quantities not supplied :—

	Per house.
Williams & Co.	£256 9
D. Williams	229 0
Rees & Son	210 0
E. Jenkins	200 0
Davies & Stephens	198 0
Owen Bros.	197 0

[Tenders referred to committee for consideration and report.]

BILSTON.—For supplying and laying water main, Orton, near Wombourn, for the Urban District Council. Mr. C. L. N. Wilson, A.M.Inst.C.E., Council Offices, Bilston. Quantities by Mr. G. Kenwick, F.S.I., Birmingham :—

H. Roberts	£553 0 0	C. J. Nevett	£448 16 3
Holloway, Wolverhampton*	467 4 9	Engineer's estimate	540 0 0

BRANKSOME.—For tar-paving, kerbing, &c., to footways, for the Branksome Urban District Council. Mr. Samuel J. Newman, Surveyor to the Council :—

	A.	B.
Wainwright & Co.	(No quotation)	3,486 5 8
S. Minty	2,623 11 6	2,973 11 6
E. Bradshaw	2,822 19 0	2,904 0 10
G. T. Budden	2,667 17 0	2,830 0 8
Asphaltic Limestone Concrete Company	2,623 14 0	2,704 15 10
Josiah Smart	2,369 5 2	2,571 19 9
H. C. Brixey	2,052 1 9	2,538 14 9
Maichin & Co.	2,440 2 7	2,521 4 5
Grounds & Newton	2,289 10 11	2,451 14 7
Turner, Heaton, & Mitchell, Manchester*	(No quotation)	£2,403 16 11

A.—If local gravel is used for the bottom layer of tar-paving.

B.—If limestone as specified is used for tar-paving throughout.

BRIDLINGTON QUAY.—For the erection of a pair of semi-detached villas, Spring-street, for Mr. F. G. Purdon. Mr. J. Earnshaw, architect, Bridlington Quay :—

Blackburn & Son	£1,499 0 0	J. H. Hudson	£1,328 13 0
E. Corner	1,385 0 0	W. Moody	1,318 10 0
W. Barnes	1,360 0 0	A. Gardam	1,158 14 6
T. Blackburn	1,329 0 0	E. Wilson*	1,137 14 5

[All of Bridlington Quay.]

BRIDLINGTON QUAY.—For the erection of two houses and three shops, for Messrs. Lowson. Mr. J. Earnshaw, architect, Carlton House, Bridlington Quay :—

J. H. Hudson	£2,307 0	A. Gardam	£1,749 15
W. Moody	1,850 0	T. Blackburn	1,664 0
F. Blackburn	1,757 0	J. Rennard*	1,550 0
E. Corner	1,750 0		

[All of Bridlington Quay.]

BROMLEY (Kent).—For the erection of a house on the Sundridge Park Estate, for Mrs. Hindley. Messrs. Niven & Wigglesworth, architects, 34, Mecklenburg-square :—
Lewis Evans, Bromley £1,600

BROMLEY (Kent).—For the erection of a house, Parkhill, Bickley, for Mr. Stenhouse. Messrs. Niven & Wigglesworth, architects, 34, Mecklenburg-square :—
Lewis Evans, Bromley £1,595

BURTON-ON-TRENT.—For the erection of Artisans' Dwellings (Block No. 1) on the Horninglow Estate, for the Burton-on-Trent Artisans' Dwellings Company, Limited. Mr. Thomas Jenkins, architect, 35, High-street, Burton-on-Trent. Quantities by the architect :—
Henry Edwards* £3,862 10

BURTON-ON-TRENT.—For alterations to the Stapenhill Vicarage, for the Rev. F. W. Meynell. Mr. Thomas Jenkins, architect, 35, High-street, Burton-on-Trent. Quantities by the architect :—
George Kennard*, schedule of prices.

CAISTOR, Lincs.—For the erection of a school-room adjoining the Congregational Church, for the Committee. Mr. J. H. Cooper, architect, Lincoln :—

Towle & Son	£463 0 0	Eastor, Caistor*	£398 7 0
S. Phillips	410 5 4	H. & R. Mawer	395 0 0

CARDIFF.—For alterations and additions to Nos. 8 and 9, High-street, Cardiff, for Mr. Samuel Hall. Mr. S. Rooney, architect. Quantities by Mr. S. Rooney, jun. :—
Thomas & Co., Cardiff* £1,000

CARDIFF.—For rebuilding No. 15, High-street, Cardiff, for Mr. E. B. Reece. Mr. S. Rooney, architect. Quantities by Mr. S. Rooney, Junr. :—
C. H. Gibbon, Cardiff* £1,200

CASTLETON (near Cardiff).—For erecting a cottage and bakehouse at Castleton, for Mr. M. Baker. Mr. S. Rooney, architect. Quantities by architect :—
Fursey & Harris, Castleton* £448

CEFN.—For alterations to English Baptist Chapel, Cefn, Ruabon. Mr. J. W. Jones, architect, Brooklea, Acrefair, Ruabon :—

R. Hopley	£1,089 12 7	Humpreys*	£925 10 0
T. T. Jones	1,057 0 0		

CHELMSFORD.—For the erection of a house in Queen's-road, Springfield Park. Mr. R. Mawhood, architect :—

Weight	£488	Gowers*	£485

CHELMSFORD.—For the erection of a pair of villas in King Edward-avenue, for Mr. W. C. Girdlestone. Mr. R. Mawhood, architect :—

W. Fincham	£1,190	J. Gowers*	£1,150

CLACTON-ON-SEA.—For the erection of two houses, Marine Parade West, for Mr. W. F. Stauffer. Mr. T. H. Baker, architect and surveyor, Clacton-on-Sea :—

Everitts & Son	£2,875	H. J. Linzell	£2,547
Myll & Ellis	2,670	F. Dupont	2,477
E. West	2,643	J. McKay	2,438

[Architect's estimate, £2,400.]

ECCLES (Lancs.).—For sewering, kerbing, paving, &c., in Joseph-street and Parrin-lane, Winton. Mr. A. C. Turley, C.E., Borough Surveyor, Town Hall, Eccles :—

Joseph-street.
Wm. Stamp, Urmston £321

Parrin-lane.
Wm. Snape & Sons, Eccles £2,909

ERWR DELYN.—For erecting a lodge at Erwr Delyn, for Mr. T. R. Thompson. Mr. S. Rooney, architect. Quantities by Mr. S. Rooney, Junr. :—
W. Rees, Dinas Powis* £475

EXMOUTH.—For the erection of shop and house, Exeter-road, for Mr. S. Hallett. Mr. R. M. Challice, architect, 9, Bedford-circus, Exeter :—

Frank Grace, Manchester-street, Exmouth*	£650	J. J. Lacey	£650
		W. J. Stokes	620

FALMOUTH.—For alterations to drill hall, for a Committee who represent a body of Guarantors of the expense. Mr. W. M. Tressider, Borough Surveyor, Falmouth :—
E. N. Moss, Falmouth £529

HALIFAX.—For rebuilding St. Paul's Church, Alma-street. Messrs. Gray & Sons, architects, 28, George-street, Halifax :—

Masonry, &c.—Greenwood & Son*	£515 0
Joinery.—C. J. Nowell*	264 16
Slating and Plastering.—Arthur Firth*	91 0
Plumbing and Heating.—Naylor & Son*	128 0

[All of Halifax.]

HERTFORD.—For the repair of roads in several parishes for the Rural District Council. Mr. J. W. Riggs, highway surveyor, Fanshawe-street, Hertford :—

Robert Green	£31 per mile.
J. Brown, Marden Farm, Hertford‡	21 ,,

‡ Accepted for the whole of the 39½ miles of roads.

HUDDERSFIELD.—For the erection of three houses, Cliffe-lane, Cliffe End. Mr. J. Berry, architect, 9, Queen-street, Huddersfield :—

Masonry.—W. Gledhill, Lockwood	£750
Joinery.—White & Brearley, Golcar	
Plumbing.—Taylor & Sons, Lockwood	
Painting.—R. Heaton, Paddock	
Slating.—T. Allison, Ltd., Milnsbridge	
Concrete.—J. Cooke, Huddersfield	
Plastering.—Robinson & Shaw, Paddock	

LEEDS.—For the erection of Parochial Institute Cavendish-road. Mr. H. Walker, architect, 8, Upper Fountaine-street, Leeds :—
Thos. Hannam, Raglan-road, Leeds £3,838 10

LEYTON (Essex).—For the construction of a chimney-shaft, for the Urban District Council. Mr. W. Dawson, C.E., Town Hall, Leyton :—

Cross & Co.	£4,607 0	J. Jackson	£3,147 0
Myles & Warner	4,200 10	F. J. Coxhead, Leytonstone*	2,935 0
Gregar & Son	3,993 0		
Neil & Co.	3,450 0		

LONDON.—For new drainage works, and alterations to The Hall, Lincoln's Inn. Mr. Dennett H. Barry, Surveyor to the Honourable Society of Lincoln's Inn, 21, Old-square, W.C. :—

B. C. Hubble	£2,675	Alfred Bush*	£1,677
J. Douglas	1,975		

LONDON.—For alterations and rebuilding, Kensington Dispensary, Church-street, W., for the Trustees. Mr. G. Gordon Stanham, architect, 100B, Queen Victoria-street, E.C. Quantities by Mr. Gilbert Booth, 3, Adelaide-street, W.C. :—

Duffield & Son	£3,340	Barker & Co.	£2,992
G. A. Watts	3,267	Perry & Co.	2,925
Walter Nash	3,150	Kearley	2,870
John Appleby	2,995	Speechley & Smith	2,845

LONDON.—For the erection of new business premises in High-street and Wirtemburg-street, Clapham, for Mr. J. G. Waite. Mr. Fred. E. Halford, architect, Ingram House, 165, Fenchurch-street, E.C. Quantities by Mr. A. J. Thompson, 50, Lincoln's Inn-fields, W.C. :—

W. Downs	£4,428	George Parker	£4,140
Killby & Gayford	4,355	Garrett & Son	4,086
Woodward & Co.	4,299	Edwards & Medway	4,056
J. E. Olver	4,281	Nichols Bros.*	4,028

LONDON.—For the erection of new mission-hall in Grange-road, The Chase, Lavender Hill, S.W., for the London City Mission :—
Nichols Bros.* £385

LONDON.—For the erection of new flour mills at Millwall Docks, E., for Messrs. McDougall Bros., exclusive of constructional ironwork. Mr. Robert E. Crossland, architect, 1, Racquet-court, Fleet-street, E.C. :—

Shillitoe & Sons	£16,250	Harris & Wardrop	£14,987
Foster & Dicksee	15,819	Perry & Co.	14,961
Patman & Fotheringham	15,476	Greenwood & Son	14,738
Ashby & Horner	15,464	J. Carmichael	14,362
Killby & Gayford	15,430	H. J. Williams	14,286
H. Lovatt	15,338	Holliday & Greenwood	13,500
Outhwaite & Son	15,234		

For the Constructional Ironwork and Gangways at above.

Hawkins & Baxter	£2,370	Deane, Ransome, & Co.	£2,024
Moreland & Son	2,262		
Shaw & Co.	2,181		

LONDON.—For erection of chimney shaft and alterations and additions to boiler-house at the South-Eastern Hospital, for the Metropolitan Asylums Board :—

	Chimney Shaft.	Alterations to Boiler House.
Kirk & Randall, Woolwich, S.E.	£6,590 0 0	
F. & H. F. Higgs	—	£5,432 0 0
F. & F. J. Wood	—	5,223 0 0
Hilton & Sons	£1,669 10 0	—
Harris & Wardrop	1,479 0 0	6,124 0 0
Whitehead & Co., Ltd.	1,075 0 0	4,525 0 0
Cross & Co.	1,042 12 4	4,685 9 0
J. O. Richardson, Albert Works, Peckham, S.E.*	969 0 0	3,858 0 0

[Architect's estimate, £5,396.]

LONDON.—For structural and decorative improvements at Mortimer House, Egerton-gardens, South Kensington. Mr. W. Macie Seaman, architect :—

A. Bush	£1,273	W. H. T. Kelland	£910
Spiers & Son	1,168	R. S. Buckeridge	865
J. Cannon	1,097		

LONDON.—For new drainage work and reconstruction of the water-closets at the Parish Schools, Hornsey-road, N., for the Guardians. Mr. William Smith, architect, 65, Chancery-lane, W.C. :—

Gunn	£829	Stevens Bros.	£754
Kirby	805	Kirk & Randall	720
Ward & Lamble	792	Weibking & Sons*	654

LONDON.—For exterior painting at Great College-street School for the School Board for London :—

Willmott & Sons	£315 0 0	W. Brown	£177 12 0
R. S. Buckeridge	280 0 0	T. Cruwys	177 0 0
H. Wall & Co.	222 0 0	F. T. Chinchen	172 11 6
Stevens Bros.	204 0 0	T. Nicholson*	153 0 0

LONDON.—For the erection of club premises, Nos. 45 and 47, Albany-road, Camberwell, S.E., for the North Camberwell Radical Club and Institute. Mr. A. J. Perriam, F.S.I., architect, 43, Cannon-street, E.C. Quantities by the architect :—

	Section A.	Section B.	Total.
Battley, Sons, & Holness	£4,995	£2,304	£7,299
Nash‡	4,825	2,400	7,225
Bloomfield & Evans	5,017	2,182	7,199
Downs	4,883	2,248	7,131
Marchant & Hirst	4,805	2,312	7,117
Tyerman	4,640	2,264	6,904
Edwards & Medway	4,630	2,170	6,800
Courtney & Fairbairn*	4,539	2,245	6,784

‡ Too late.

LONDON.—For the erection of boundary walls at Wandsworth Cemetery, for the Wandsworth Burial Board :—

Parsons & Co.	£296	R. F. Seed	£267
Williams & Co.	293	Fane & Co.	250
Dakin & Co.	273	R. S. Ronald	245

LONDON.—For additions to St. Catherine's Church, Hatcham, for the Rev. Howard Truscott. Mr. E. Beckett Lamb, architect, 31, Craven-street, Strand, W.C. :—

Higgs & Hill	£2,724	A. B. Chirgwin	£2,246
Battley, Sons, & Holness	2,375	R. Avard	2,220

RHOOSE.—For the erection of "Kemey's Arms Hotel, Rhoose, near Cardiff, for Mr. John Weaver. Mr. S. Rooney, architect. Quantities by Mr. S. Rooney, jun. :—
J. T. Hampson, Cardiff* £2,350

SALTASH (Cornwall).—For the erection of stables, extension of quay, and building boundary wall, for Messrs. Bennett & Palmer. Mr. Edgar M. Leest, architect, Public Hall Chambers, Devonport :—

	Stables.	Quay.	Boundary Wall.
J. Paynter	£369 0	£279	—
Taylor & Mutton, Saltash*	352 10	205	£80

ST. BRIDES MAJOR (Cardiff).—For the erection of new granary, &c., Pool Farm, St. Brides Major, for Mr. T. R. Thompson. Mr. S. Rooney, architect. Quantities by Mr. S. Rooney, jun. :—
J. T. Hampson, Cardiff* £350

[*See also next page.*

ST. MELLONS (Cardiff).—For erecting a pair of cottages at Ty-r-Winch, St. Mellons, for Mr. W. Williams. Mr. S. Rooney, architect. Quantities by architect :—

Fursey & Harris, Castleton* £490

SOUTHAMPTON.—For the erection of a shop and dwelling-house in Shirley-road, Southampton, for Mr. F. Long. Messrs. Jurd & Sanders, architects, Portland-street, Southampton :—

Thomas Howell* £450

SOUTHAMPTON.—For the construction of new road at Bitterne, near Southampton, for Mr. John White. Messrs. Jurd & Sanders, surveyors, Portland-street, Southampton :—

Saunders & Co.	£535 16 5	Joseph Butt....	£292 13 9
Clarke & Sons..	365 0 0	Isaac Barrett ..	287 0 0
Grounds & Newton.....	322 16 5	James Shepherd*	219 2 6

SOUTHAMPTON.—For construction of roads, sewers, curbing, channelling, &c., at Atherley Estate. Messrs. Jurd & Sanders, surveyors, Portland-street, Southampton :

F. Osman £584
Grounds & Newton..... 382
Joseph Butt* 345

SOUTHAMPTON.— For the erection of offices and factory in French-street, for Mr. James Dupré. Messrs. Jurd & Sanders, architects, Portland-street, Southampton :—

	Buildings with Bath stone facings.	Extra if Ham Hill stone facings.	Total.
Jenkins & Son	£2,152 0	£42 0	£2,194 0
Brinton & Bone..	2,015 16	50 0	2,065 16
Hood	1,937 0	20 0	1,957 0
F. Walters	1,840 0	30 0	1,870 0
P. Merefield	1,780 12	55 0	1,835 12
Golding & Ansell	1,766 0	13 18	1,779 18
G. Harris*	1,720 0	41 14	1,761 14

TROWBRIDGE.—For kerbing, channelling, paving, &c., in Mortimer-street, for the Urban District Council. Mr. F. E. G. Bradshaw, Surveyor, Town Hall, Trowbridge :—

Free Bros.	£453 3 9	Free & Sons, Bristol	£400 0 0
West Gloucester Pennant Stone Company	443 14 5		

TROWBRIDGE.—For the erection of the first portion of a Technical School at Trowbridge, Wilts, for the Committee. Mr. Thos. Davison, architect, London. Quantities by Mr. Geo. Fleetwood, 3, New-court, Lincoln's Inn, London :—

Stephens, Bastow, & Co., Ltd.....	£5,712 0 0	Hayward & Wooster....	£5,090 0 0
Williams ..	5,459 0 0	G. Moore	4,898 18 11
Long & Sons	5,130 0 0	Ed. Linzey ..	4,716 0 0
		Wm. Webb ..	4,638 9 0

TUTBURY.—For alterations to shop premises in High-street, for the Burton-on-Trent Co-operative Society, Limited. Mr. Thomas Jenkins, architect, 35, High-street, Burton-on-Trent. Quantities by the architect :—

A. Geary, Burton-on-Trent* £159

UPWELL.—For the erection of a manse. Messrs. Kerridge & Sons, architects, the Club Chambers, Old Market, Wisbech. Quantities by the architects :—

Elworthy & Co.	£370	Hipwell & Co.....	£340
Girling & Co.	355	J. F. Parker.....	336
J. J. Jarvis	340	W. Sutton, Upwell* ..	330

WIMBORNE (Dorset).—For making-up, draining, &c., Grove-road, for the Urban District Council. Mr. C. Munckton, surveyor, Council Offices, Wimborne :—

G. T. Budden, Kinson, Dorset..... £185

[Surveyor's estimate, £168.]

Council decided to carry out the work by their own men under their Surveyor.

WINLATON-ON-TYNE. — For pulling down and rebuilding the "New Inn," for Mr. R. Newton, Victoria Brewery, Newcastle-on-Tyne. Mr. J. G. Crone, architect, 50, Grainger-street, Newcastle-on-Tyne :—

J. Lockey	£2,328 0 0	T. H. Wilson.	£1,987 14 0
R. Smith.....	2,290 0 0	Armstrong & Son.....	1,984 6 6
Thompson & Co., Blaydon* ..	2,057 0 0		

* Accepted subject to modifications.

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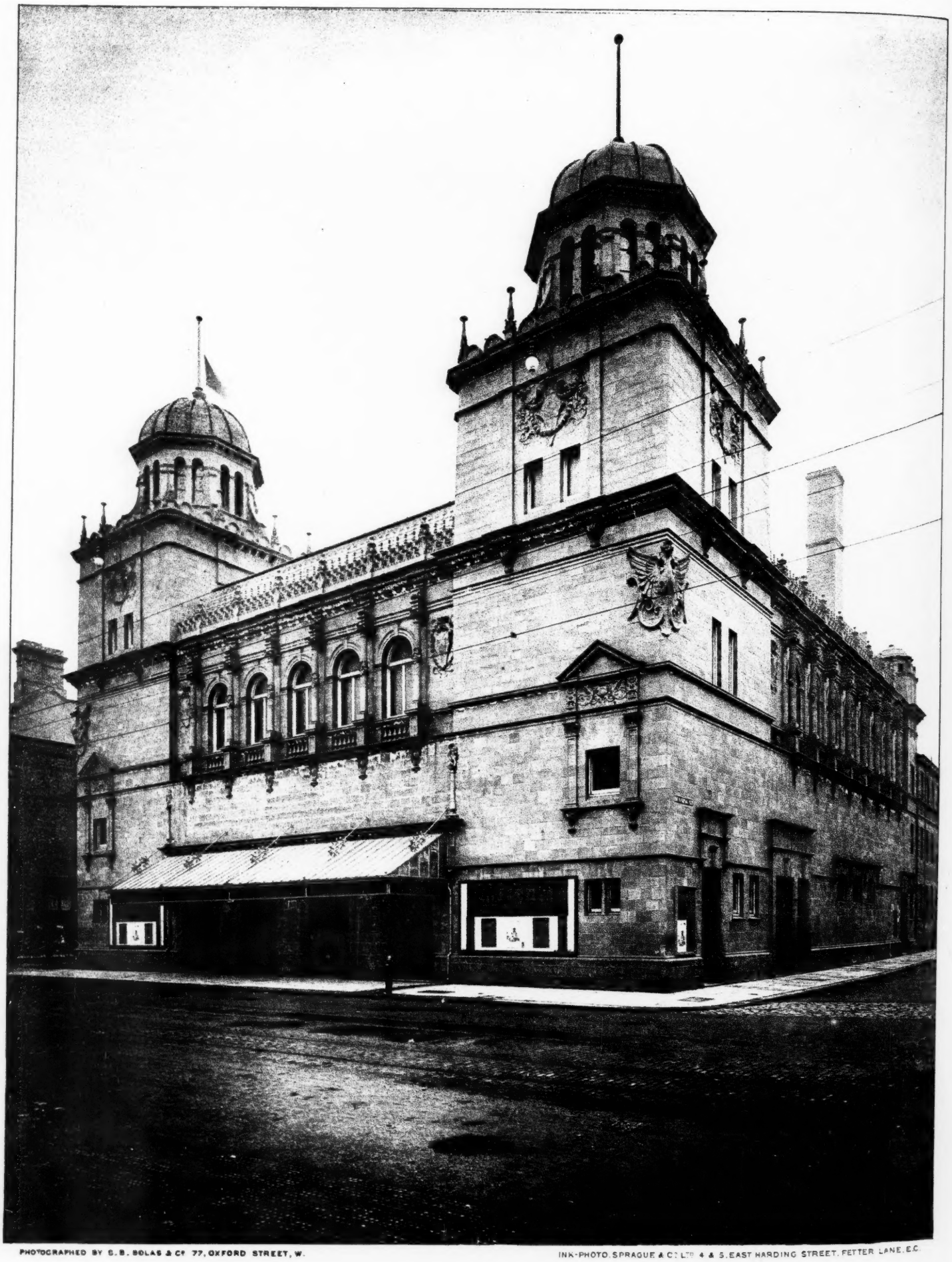

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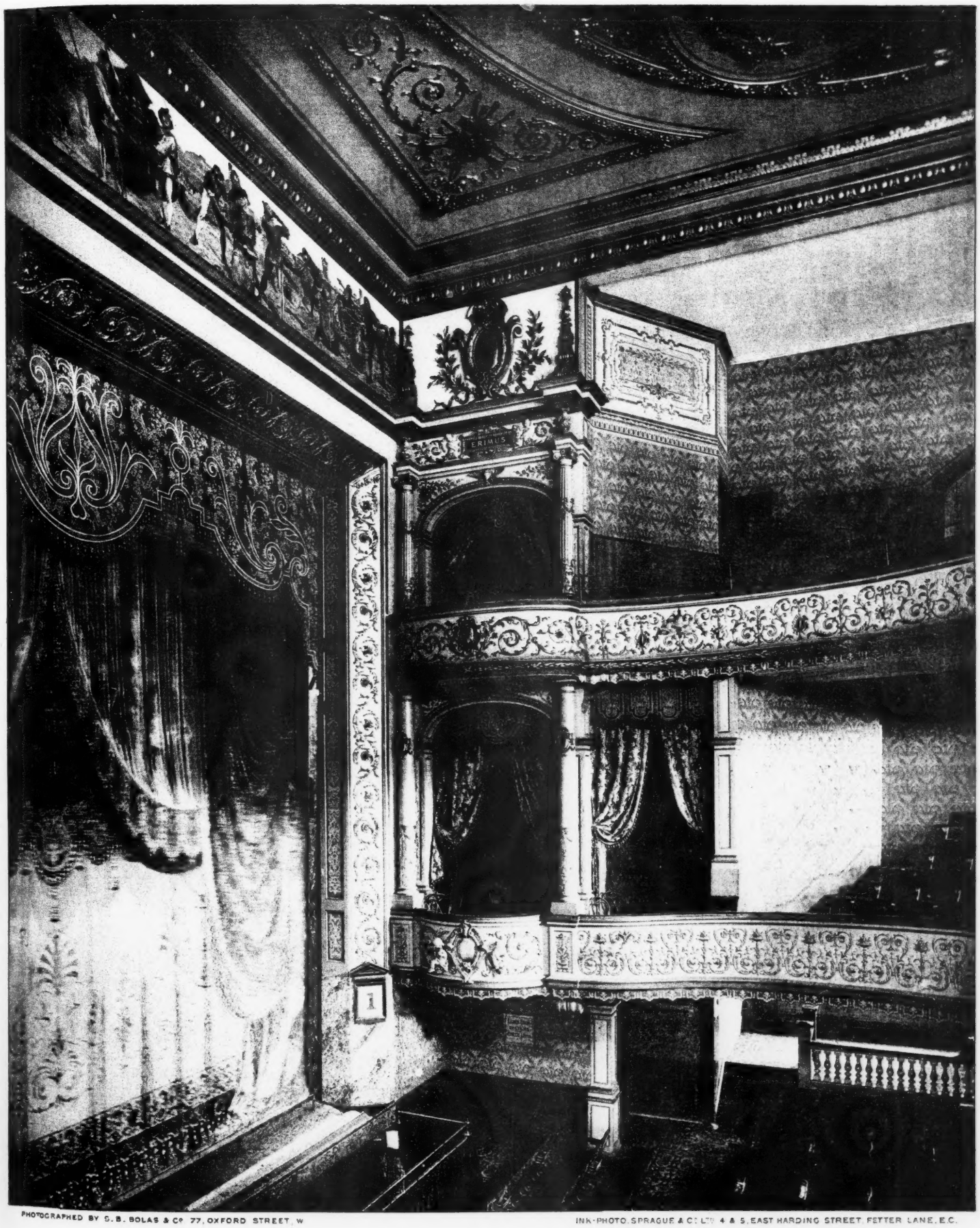

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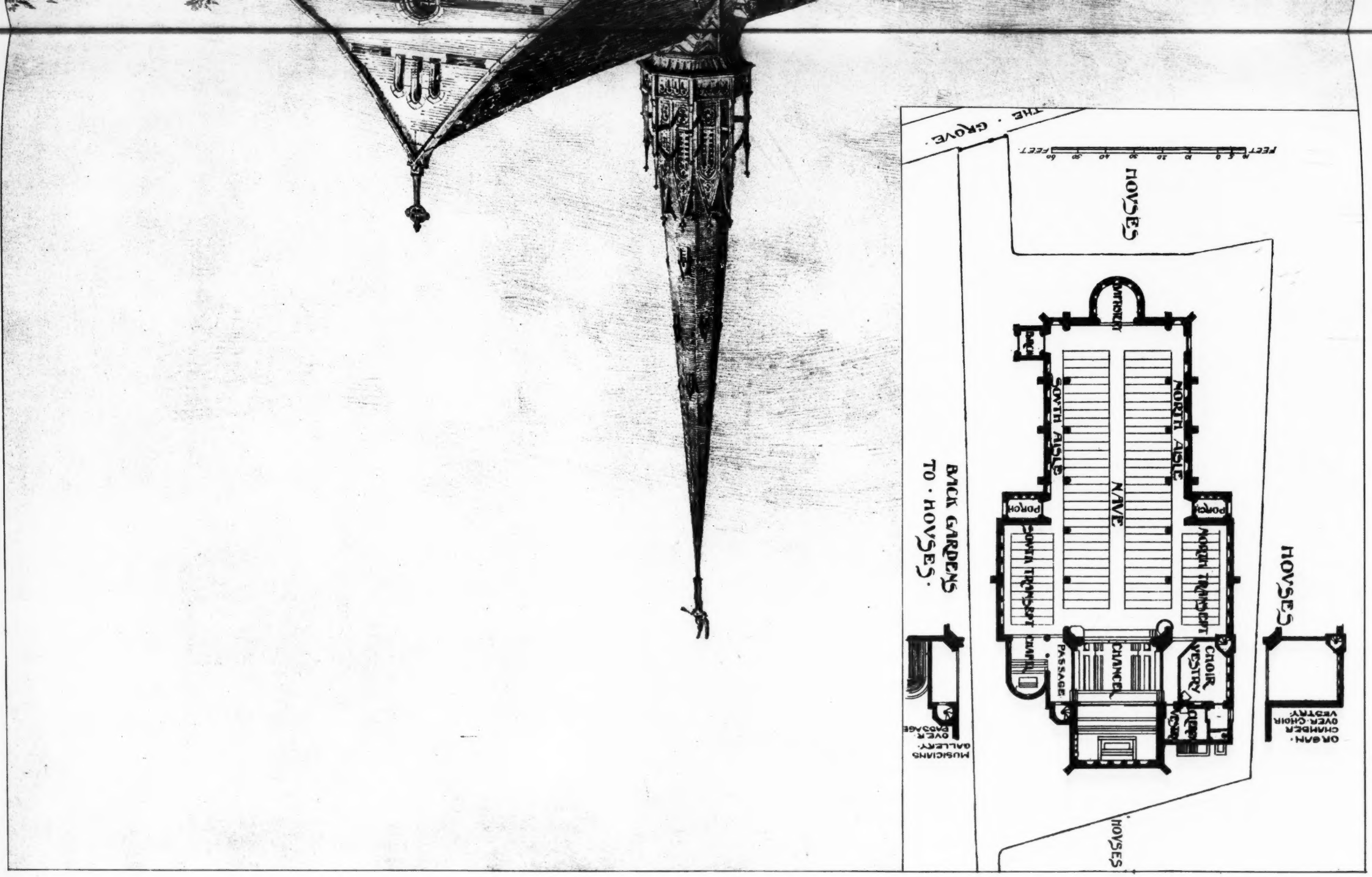
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SOUTH AISLE
PORCH
PORCH
SOUTH TRANSEPT
NORTH TRANSEPT
CHANCEL
CHOIR VESTRY
PASSAGE
ORGAN CHAMBER OVER CHOIR VESTRY
HOUSES
BACK GARDENS TO · HOUSES.
MUSICIANS GALLERY OVER PASSAGE
HOUSES

St Saviours Church Ealing.
View from South East.
Geo. H. Fellowes Prynne, Archt

Alt Del 1891

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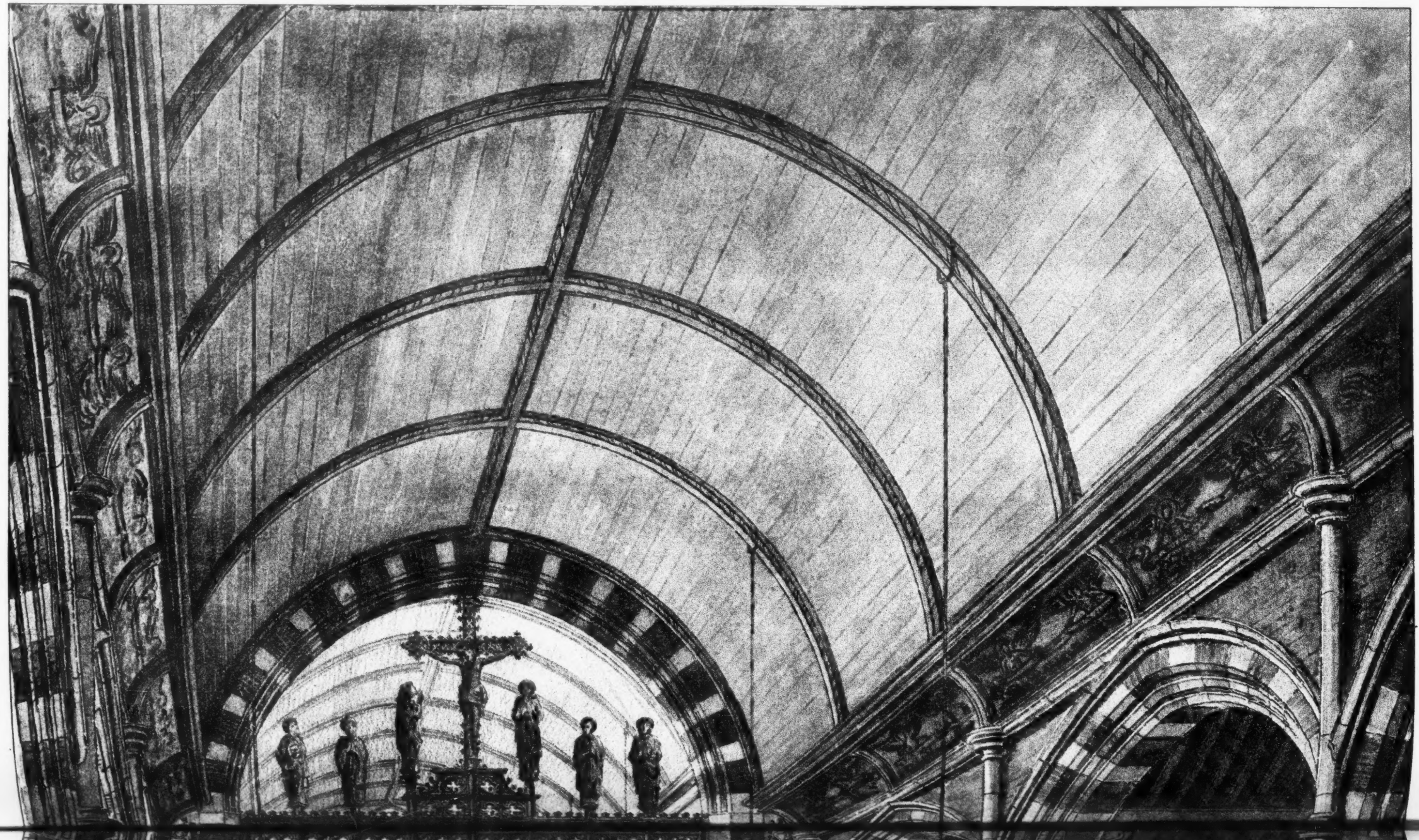

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ST. SAVIOUR'S CHURCH, EALING: INTERIOR.—Mr. G. H. Fellowes Prynne, F.R.I.B.A., Architect.

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